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Inquiries from the media and the public about the work of the Committee should be made to Stephen Hupp, Executive Director, CSI, P.O. Box 703, Amherst, NY 14226-0703. Tel.:716-636-1425. Fax: 716-636-1733. Email: shupp@centerforinquiry.org.

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VISIT CSICONFERENCE.ORG TO LEARN ABOUT THE 2026 CSICON AND REGISTER. THERE YOU CAN ALSO STAY UPDATED ON THE SCHEDULE AND LIST OF SPEAKERS.

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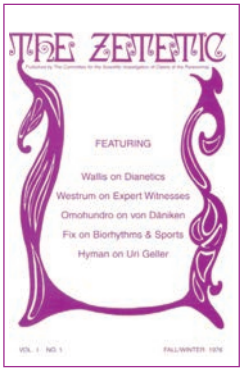
[FROM THE EDITOR

Fifty Years of Inquiry!



In the fall of 1976—fifty years ago—philosopher and secular humanist Paul Kurtz organized the meeting in Buffalo, New York, that led to the development of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP). That same year, CSICOP published a journal called *The Zetetic*. The journal opened with this definition:

> ZETETIC 1. *adj.* proceeding by inquiry.
> 2. *n.* skeptic, seeker;
> *specif*: one of a group of Pyrrhonist philosophers.
> —*Webster's Third New International Dictionary*

The journal's editor, Marcello Truzzi, was joined by an impressive editorial board including Kurtz, James Randi, Ray Hyman, Martin Gardner, and Dennis Rawlins. In Truzzi's opening editorial, he wrote, "As a name for the journal it reflects our belief that the proper attitude of science toward unusual claims should be one of balance between openness to new facts and skepticism with critical attention toward facts which are anomalous."

The journal's second editor—and longest serving by over four decades—Kendrick Frazier ushered in a name change to The Skeptical Inquirer while maintaining the tone of open-minded skepticism. So began fifty years of organized skepticism in which *investigating* was valued over *debunking*. We'll be celebrating skeptical inquiry in various ways through all of 2026, with this issue being the introduction.

In our first cover story, James E. Alcock, a member of CSI's Executive Council, provides an insider's look into the events surrounding CSICOP's founding. Adding further context, Massimo Polidoro also insightfully uses his column to highlight some of the key people and events that led to the organization's formation.

Eugenie Scott, also on CSI's Executive Council, shares a story demonstrating how CSICOP influenced the formation of local groups, such as the Bay Area Skeptics. Inspired by an earlier investigation into "faith healer" Peter Popoff, the local group investigated another supposed faith healer.

The mentalist Banachek shares his own origin story and how he joined forces with James "The Amazing" Randi and Michael Edwards to pull off Project Alpha, the greatest skeptic-led hoax of the twentieth century. Next, Richard Saunders, host of *The Skeptic Zone* podcast, poses a question: "What would the world look like without the modern skeptical movement?"

Finally, I'll preview the next CSICon, an in-person celebration of the magnificent fifty-year history of the Committee for Skeptical Inquiry (CSI), now part of the Center for Inquiry (CFI). We hope you'll join us from June 11–14, 2026, in Buffalo, New York, the place where our story began!

—Stephen Hupp

Skeptical Inquirer™
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News Bites: From a Chewbacca-Like Discovery to the Introduction of Anti-Science Bills

William Matthew London and Stephen Hupp

The "Chewbacca" Coral. Source: Xu, Y., Watling, L., Zhan, Z. & Xu, K. (2025) | Mapress.com

Chewbacca-Like Creature Discovered. On September 4, 2025, the journal *Zootaxa* described a new species of coral called *Iridogorgia chewbacca*, named after Han Solo's buddy in *Star Wars*. Though the coral doesn't speak Shyriiwook or wear a bandolier, its hairlike branches do resemble the Wookiee just enough to bear the same name. (For more, read "New Species of Coral Named after Chewbacca" at popsci.com.)

Bill Nye, CSICon Headliner, Receives Star on Hollywood Walk of Fame. On September 22, 2025, Bill Nye, known for his engaging science-based television shows, received a star on the Hollywood Walk of Fame. According to Walk of Fame producer Ana Martinez, "His star is a tribute to his dedication in making science accessible and entertaining for all ages through his iconic educational show." Come see Bill Nye live on June 13 at CSICon in Buffalo, New York! (For more, read "Bill Nye" at walkoffame.com and see the back of this issue to learn more about CSICon.)

Researchers Conclude More Stringent Oversight of IV Hydration Spas May Be Necessary. On October 6, 2025, *JAMA Internal Medicine* published a study about intravenous (IV) hydration spas in the United States. Evidence is lacking that these spas improve health, yet the study found 1,774 unique health claims made on 255 spa websites. Only 167 of those websites provided credentials or broad statements regarding having licensed health professionals on staff who were responsible for dispensing the therapies. Out of the eighty-five spas that had contacts who could respond to all the phone inquiries by secret shoppers, only twenty-four explained that a consultation with a licensed medical professional was required prior to provision of hydration. Only four states have released guidance that addresses all four of these oversight categories: governance, prescriber credentials, dispensing practices, and compounding practices. (A summary of the study is provided by *Consumer Health Digest*, Issue #25-41 at quackwatch.org.)

U.S. Supreme Court Rejects Alex Jones Appeal of Sandy Hook Defamation Judgment. On October 14, 2025, the U.S. Supreme Court declined to hear Alex Jones's appeal to pause a lower-court judgment requiring him to pay more than $1.4 billion for making false claims about the December 2012 school shooting at Sandy Hook Elementary School in Newtown, Connecticut. The shooting caused the deaths of twenty children and six adult staff members. On his media platform InfoWars, Jones responded by describing the shooting as a government operation and hoax staged by crisis actors. Jones lost lawsuits filed by family members of the shooting victims and one FBI agent alleging defamation and infliction of emotional distress. (For more, read "Supreme Court Declines to Hear Alex Jones' Appeal" at scotusblog.com.)

***Frontline* Examines the Rise of Robert F. Kennedy Jr.** On October 21, 2025, *Frontline* on PBS aired a documentary on the life of Robert F. Kennedy Jr., including his appointment as Secretary of the U.S. Department of Health and Human Services (HHS), his firing of employees *en masse*, his efforts to undermine science-informed vaccination policy, and his alarmist announcement that acetaminophen (i.e., Tylenol) causes autism. The documentary includes interviews with Kennedy's extended family, supporters, critics, and vaccination experts. It also includes interviews with journalists who have reported on his activities and with Centers for Disease Control and Prevention officials who left the agency because he made it too difficult for them to do their jobs properly. (Related links can be found at *Consumer Health Digest*, Issue #25-43 at quackwatch.org.)

The Associated Press Reveals Over 420 Anti-Science Bills Were Introduced in 2025. On October 21, 2025, the Associated Press revealed that more than 420 anti-science bills attacking longstanding public health protections have been introduced in forty-three statehouses across the United States in 2025. The bills include 350 anti-vaccine bills in forty-three state legislatures and more than seventy bills to reduce access to fluoride or make it easier to sell or consume raw milk. Most of the legislation was pushed by at least one of four national groups connected to Health and Human Services Secretary Robert F. Kennedy Jr. About thirty bills have been enacted or adopted in twelve states. (For more, read *Consumer Health Digest*, Issue #25-43 at quackwatch.org.) ■

William Matthew London is the editor of *Consumer Health Digest*, Quackwatch's free weekly electronic newsletter.

Stephen Hupp is the executive director of CSI and editor of Skeptical Inquirer.

Jeff Meldrum, Top Bigfoot Proponent, Dies at 67

Matt Crowley

On September 11, 2025, the family of Don Jeffrey Meldrum announced that he had died following a brief battle with brain cancer. Meldrum was a tenured professor of anatomy and anthropology at Idaho State University but was best known as the leading advocate for the biological reality of Bigfoot.

Within the Bigfoot subculture, Meldrum occupied a unique position. He was not so much a field researcher out in the wilderness looking for Bigfoot—though he did some of that—but a public advocate and analyst of evidence supporting Bigfoot. He was the keynote speaker at numerous Bigfoot conferences and appeared on many television programs. Because he had a PhD and was an active academic (in contrast to the many amateur "weekend Bigfoot hunters"), he was best positioned to be taken seriously by the scientific community.

Prior to Meldrum, another working scholar, Grover Krantz, had occupied the role of leading academic Bigfoot advocate. Krantz died in 2002, leaving Meldrum essentially alone in academia as a vocal Bigfoot proponent. Both wrote popular books on the subject; Krantz authored *Bigfoot Sasquatch Evidence* in 1992, and Meldrum authored *Sasquatch: Legend Meets Science* in 2006. A review of Meldrum's book appeared in the May/June 2007 issue of Skeptical Inquirer. Meldrum also edited his own cryptid-themed journal, *Relict Hominoid Inquiry*.

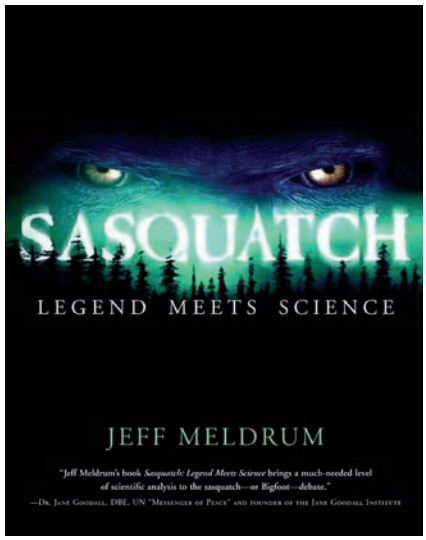
Meldrum's status in the Bigfoot subculture was virtually unimpeachable. His manner was always calm, and he was highly articulate and thus well suited for television and podcast appearances. He did not engage in the nasty public spats that often plague fringe subcultures.

Nevertheless, his role as an analyst of Bigfoot evidence was marred by several surprising failures. Meldrum was a strong proponent of the Bigfoot evidence

Jeffrey Meldrum portrait for Idaho State University

proffered by a Washington State resident, Paul Freeman. Freeman claimed to have multiple sighting claims, numerous track finds, at least one videotape recording of Bigfoot, still photos, a handprint, and more (for more on this, see Michael Dennett's articles in this magazine, Fall 1994 and Spring 1989). Despite clear and convincing evidence of fraud and hoaxing—obvious not only to skeptics but other prominent Bigfoot proponents—Meldrum continued to endorse Freeman. Meldrum also continued his endorsement of (and association with) noted Bigfoot researcher Todd Standing long after Standing's hoaxing had been revealed.

Meldrum was also a strong public advocate that a large plaster cast made in September 2000 during a Bigfoot research expedition was good evidence of the creature. Known as the "Skookum cast," it was promoted by top Bigfoot advocates as having been made by a reclining Sasquatch. Meldrum, drawing heavily on his expertise in anatomy, devoted an entire chapter in his book advocating that it was made by Bigfoot and not any other animal. He went as far as to suggest there was a heel that bore apparent fingerprints. The narrative of this large and oddly shaped plaster cast remained relatively unchallenged until July 2006,


SASQUATCH
LEGEND MEETS SCIENCE
JEFF MELDRUM
"Jeff Meldrum's book *Sasquatch: Legend Meets Science* brings a much-needed level of scientific analysis to the sasquatch—or Bigfoot—debate."

when cast copies were studied by Anton Wroblewski. With a PhD in geology and specializing in ichnology (the study of trace fossils), Wroblewski was uniquely suited to properly analyze the cast. He concluded it was made by a large cervid, probably an elk. While his initial analysis was hotly disputed in the Bigfoot community, Wroblewski eventually released a photo montage of how features of the elk exactly matched up with the features of the cast. At this point it became obvious, even for a layperson, that it was an elk (for more on this, see "Is Bigfoot Dead?" in the January/February 2024 issue of SI).

Despite his occasional blind spots regarding evidence and endorsing hoaxers, the field is better for Meldrum's efforts. Unlike many in the field who are only in it for fame or money, Meldrum was sincere in his belief in Bigfoot's existence. Meldrum, like the so-called "four horseman" of Bigfootery (Krantz, René Dahinden, John Green, and Peter Byrne), did not live to see definitive evidence of Bigfoot appear. ■

Matt Crowley is a longtime skeptic, former pharmacist, and retired sideshow performer with the Jim Rose Circus.

Revolutionizing Science: Jane Goodall and the Challenge to Conventional Wisdom

BERTHA VAZQUEZ

For more than twenty years, I kept a signed postcard of Jane Goodall affixed to the bulletin board behind my classroom desk as a daily reminder to me and my students that scientific greatness begins with observation and intellectual humility. The postcard pictured the iconic Jane Goodall sitting next to Freud, a chimpanzee. She signed the postcard, "Together we can change the world."

But it wasn't until April 29, 2013, that I experienced this personally. On that day, Goodall met my nine-year-old son. While the crowd waited, she bent low to his level and offered a few simple, genuine words of encouragement. I'll never forget the hush that surrounded them. It was a magical moment, and everyone in the room realized the significance. This scientist who had revolutionized the study of animal behavior, the only female scientist many people could recall by name, was taking a moment to speak to a little boy. She wasn't going through the motions; she was patient and deliberate, asking him questions and listening intently.

Now twenty-one years old, my son still remembers that moment. After she died, he sent me a text: "Mom, I'm so lucky to have met such a legend." He attached the grainy photo of the meeting; I didn't even know he had a copy. That profound personal connection, that insistence on seeing the individual worth of a child or a chimpanzee, is the very foundation of Goodall's world-changing scientific legacy.

Jane Goodall with the author's son in 2013.

Goodall's most radical achievement was not merely studying chimpanzees but *redefining* them. She challenged the conventional scientific wisdom that had rigidly separated humans from the animal kingdom. At the time her work began in Gombe, Tanzania, established science insisted that animals were incapable of exhibiting complex emotions or having distinct personalities. The prevailing behaviorist model dictated that researchers number the animals being studied rather than naming them. They stripped them of their identity to maintain perceived objectivity. Goodall discarded this rigid dogma and gave her subjects names such as David Greybeard, Flo, and Fifi. She treated them as individuals with rich inner lives. Through patient, prolonged observation, she proved what the establishment had dismissed as "anthropomorphism"—chimpanzees experience joy, grief, fear, and deep social bonds.

This willingness to reject the accepted norm led to her most famous discoveries. The moment she observed David Greybeard stripping leaves from a twig to fashion a tool for "fishing" termites, she didn't just document a new behavior; she fundamentally rewrote the definition of humanity. The long-accepted definition of humanity as "Man the Toolmaker" crumbled, prompting

Jane Goodall Tanösvény
ZOTTAN VÉDETT KASZPI HARAGOSSIKLÓ VÉDELMÉBEN
azért, hogy segítsünk ezeken az élőlényeken, azzal csúfot üzünk az igazságosság fogalmából."
Dr. Jane Goodall
Kövesd a nyomukat a Jane Goodall Tanösvényen!
Itt vagy!
Jane Goodall Institute
vitrolphoto | Shutterstock

her mentor, Louis Leakey, to famously say, "Now we must redefine man, redefine tool, or accept chimpanzees as human."

Later, her documentation of the brutal, four-year Gombe Chimpanzee War revealed a darker side of complex social organization, proving that violence and primitive warfare were also part of the continuum of behavior we share with our closest relatives. Her findings were met with derision. They threatened the human-centric view of the world.

Jane Goodall was a woman without a conventional degree. She was an outsider defying the established male-dominated scientific structure.

Goodall's struggle mirrors the challenges faced by other scientific pioneers whose crucial evidence-based insights were initially dismissed because they countered conventional wisdom. Consider Ignaz Semmelweis, who in the 1840s discovered that simple handwashing could drastically reduce fatal childbed fever. He was ridiculed and ignored by a medical community that could not accept invisible unknown agents (germs) were being carried by their own hands. Similarly, during the London cholera epidemics, John Snow was the lone voice correctly identifying contaminated water, specifically the Broad Street pump—as the source of cholera. He challenged the dominant "miasma" theory that blamed bad air. The establishment fought his conclusion until the evidence became undeniable.

This pattern extends to the earth sciences. Alfred Wegener's brilliant theory of continental drift was rejected for decades by geologists who could not conceive of a mechanism powerful enough to move continents. Like Goodall, he was considered an outsider whose observations (the fit of the continents, matching fossils across oceans) were dismissed as purely circumstantial.

Goodall's impact is not limited to primatology or conservation; it is an overwhelming validation of the need for diverse perspectives and intellectual humility in all sciences. The most revolutionary truths can be hidden in plain sight, waiting for someone unburdened by dogma to simply sit down, watch, and take notes. For science teachers and their students, her legacy is further amplified by her global educational programs and her profound message of scientific accessibility. She championed the belief that any child, anywhere, can become a scientist. I saw this firsthand.

The legacy of Jane Goodall, the scientist who took the time to speak with my nine-year-old son, is a testament to the idea that patience, curiosity, and intellectual humility are some of the most powerful tools a scientist can possess. ■

Bertha Vazquez is the director of education for the Center for Inquiry, founder of the Teacher Institute for Evolutionary Science, and a CSI fellow.

What Do Kids' Magic Shows and Social Media Have in Common?

STEVE TRASH

Penn and Teller are amazing magicians, but they do *not* do shows for kids. According to Teller, shows for kids are "just too hard." As someone who does do kids' magic shows, I can verify that they are *very* different than magic shows for adults.

Here's one of the unique features of performing magic for kids that Penn and Teller know but you might not. Often, during a show, a kid will yell out "I know how you did that!" They don't whisper it respectfully or look to their friend politely and nod knowingly; it's shouted for everyone to hear.

Why do some kids do this? A generous interpretation would be that some kids are just so excited that they've figured out something interesting that the joy bursts out into the world. A less generous interpretation would be that some kids really want attention and need the other kids (and the magician) to recognize their intelligence, perceptiveness, cleverness, insightfulness, and, most of all, their uniqueness. Their desire to be "seen and heard" overrides any desire to be polite, have humility, or even just sit back and enjoy the show.

The hilarious thing is that they rarely know anything about how the trick is really done. All illusions are so much more complex than one surface-level secret. When the kid yells, "It's a mirror! It's a mirror!," they might be partially right. A mirror might truly be a part of making the illusion work, but it's only a small part and genuinely doesn't explain how the illusion is fully done. In essence, they've deduced one piece out of the ten you'd need to make the illusion effective.

Take it from me, a professional magician without any natural abilities at deception: illusions are difficult to create. The many components that go into pulling off an illusion might include psychology, visual misinterpretation, misdirection, secret spaces, repetitive motions, trading out genuine for fake items, and so much more.

Kids who yell out "I know how you did that!" are often experiencing the Dunning-Kruger effect. That is, people tend to overestimate how much they know about any given subject, especially when they know very little. We don't know how much we don't know. We often believe we know much more about a subject than we actually do. This is a very human tendency. A corollary to this is astonishing: the more we actually know, the less our confidence is about how much we actually know.

The Dunning-Kruger effect also applies extremely well to grownups on social media, particularly when folks make posts such as "You're so stupid," "That's not true," or "You're a fool," especially when they have no expertise in the area.

A lot of people believe that because they *can* comment, they *should* comment. And because they have really strong feelings about the subject, regardless of their actual knowledge or expertise, they shout about it.

The law of large numbers means that they are going to find like-minded others on the internet who believe the same thing, giving them social proof of their "correctness." In a way, social media sets out the welcome mat by saying, "Welcome! We'll validate your ideas even if they're wildly, demonstrably false. Just keep spouting misinformation; don't worry, the algorithm will back you up and spread it around."

How do you fix it? Fixing others is beyond your control, but being aware of the Dunning-Kruger effect in ourselves is the first step to fixing our own misplaced confidence. To know that we all tend to overestimate our knowledge, our expertise, our ability to know stuff—and then to temper the things we say with humility will put us on a good path. Attempting to use critical thinking to explore the things we believe are true is the best path forward. We should always be asking ourselves what facts counter our thoughts.

Here's the deal: overly confident statements such as a blurted out "I know how you did that!" during a magic show will always exist, because that overconfidence is built into each of us. Once we realize it's our own overconfidence and not the truth that's speaking up, we can do something about it. And that will make kids' magic shows, and the world, a lot better. ■

Steve Trash is a professional magician, star of the PBS television show *Steve Trash Science*, and creator of Media Masters Rock—a free toolkit for teachers (mediamastersrock.com). His website is stevetrash.com.

Massimo Polidoro is a writer, lecturer, investigator of the unusual, and cofounder of CICAP, the Italian skeptics group. His YouTube channel is at @Massimo_Polidoro.

The Spark That Started CSICOP

Editor's note: This is the first in a multipart series of columns from Massimo Polidoro in which he recounts stories from the history of the modern skeptical movement.

CSICOP at fifty: Who would have thought?

Back in 1976, when the birth of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) was announced to the world, it seemed like a bizarre anomaly.

America—like much of the world—was saturated with tales of the paranormal and claims of pseudoscientists. The list was endless: the Bermuda Triangle, ESP, ancient astronauts, Kirlian photography, astrology, the Loch Ness monster, psychic surgery, Atlantis, thinking plants, flying saucers, etc. And yet the scientific world mostly looked the other way.

Many scientists considered the idea of debunking these topics beneath their dignity. Others simply thought it was useless because people will always believe what they want, no matter the facts. Worse, any attempt to challenge a popular belief would inevitably lead to complaints of elitism and "scientific authoritarianism."

As a result, the scientific community was often reluctant to engage with the subjects. That vacuum allowed occult and pseudoscientific ideas to flourish unchecked in the media and public discourse. Even Carl Sagan, when he famously dismantled Immanuel Velikovsky's catastrophism theories at the 1974 American Association for the Advancement of Science (AAAS) meeting in San Francisco, admitted that the fifty-seven-page paper he prepared had taken precious time away from his actual research—though, he added, it was worth it (Frazier 1976, 346).

And yet amid this cultural fog, something new took shape.

Here Comes … CSICOPOP?

In 1976, at the annual meeting of the American Humanist Association in Buffalo, New York, a group of scholars and scientists announced the formation of the "Committee to Scientifically Investigate Claims of the Paranormal and Other Phenomena." (CSICOPOP? No wonder they soon changed the name to CSICOP!)

"Often the least shred of evidence for these claims is blown out of proportion and presented as 'scientific' proof," said cochairman Paul Kurtz, philosopher at SUNY Buffalo and editor of *The Humanist*. "Many individuals now believe that there is considerable need to organize some strategy of refutation. Perhaps we ought not assume that the scientific enlightenment will continue indefinitely; for all we know, like the Hellenic civilization, it may be overwhelmed by irrationalism, subjectivism and obscurantism" (Frazier 1976, 346).

Kurtz's words sound eerily current. But before CSICOP was officially born, there was a lesser known yet revealing prehistory.

A Headless Singer, a Magician, and a Plan

It all began in summer 1973, with an idea springing from the prolific mind of magician James "The Amazing" Randi.

Over the past thirty-eight years, I've had the good fortune to discuss this incredible story—both in person and through letters and emails—with most of its protagonists: Randi, Ray Hyman, Martin Gardner, Paul Kurtz, Marcello Truzzi, and Kendrick Frazier. And now, as we arrive at CSICOP's fiftieth anniversary, it feels like the right time to share some behind-the-scenes stories, starting with the organization's original name. Not CSICOP. Not even CSICOPOP. But SIR.

James Randi in his youth circa 1950s.

"I like your idea for setting up a nonprofit organization with a title such as Sanity in Research," Hyman wrote in a letter to Randi dated August 14, 1973.

That's likely the first written mention—by someone other than Randi himself—of the idea of forming a skeptical group. The two men, both fans of mathematician and magician Martin Gardner, had only spoken by phone until they met backstage at an Alice Cooper concert in Portland, Oregon, on May 24, 1973. Randi, then part of Cooper's touring show (he chopped the singer's head off every night), had invited Hyman to see the performance.

Afterward, they started talking. "We should really do something about Geller," Randi said. "What about starting an organization to investigate psychic claims?"

And so, the seed was planted.

But why would Randi choose such a curious name: SIR?

"It was a play on *SRI*, the Stanford Research Institute, which at the time was conducting research on Uri Geller," Randi told me. "They were SRI—so we could be SIR: *Sanity in Research*!"

But was SRI's research on Geller really so influential as to inspire a counter-organization?

In a way, yes.

Bending Metal at Stanford

Geller, a young Israeli psychic, was causing a sensation in Europe and making headlines in the United States, claiming to perform under "scientific" conditions at SRI. Two physicists there—Russell Targ and Harold Puthoff—had tested not only Geller but also "psychic detective" Peter Hurkos.

Apparently, it was not easy to get information on the parapsychological research being done at SRI; for some reason, everyone seemed reluctant to share. But then Hyman caught a break.

Hyman was a psychologist at the University of Oregon with a background in amateur magic and an interest in the paranormal (who had even coauthored a book looking into dowsing; Vogt and Hyman 1959). He was approached by Austin Kibler, a colleague—and also a colonel at the Department of Defense's Advanced Research Projects Agency (ARPA). Kibler asked Hyman if he'd be interested in visiting SRI.

"There is this psychic down there," Kibler said. "I know what you're thinking, but this guy is not like any other psychic you have ever seen. He can do anything most psychics can do, but he can also bend metal with his mind" (Shermer 1998).

Ray Hyman at the CSICOP Conference in 1983. Source: Robert Sheaffer | Wikipedia.

Randi and Hyman in 2010. Source: Brian D. Engler | Wikipedia.

Hyman was skeptical. Kibler persisted:

> I don't necessarily believe, but I've watched him myself and let me tell you what he did. In a room of scientists, not just psychologists (he meant so-called "real" scientists like physicists!), he asked to borrow a ring. He said "Don't let me touch it." He didn't touch the ring, which was placed in the middle of a table. He concentrated on it and the ring stood on end, split, and shaped itself into the letter S. (Shermer 1998).

It turned out Kibler hadn't in fact seen this himself; instead, he'd heard about it. And that, as Hyman would later point out, was his first important lesson in how psychic claims get reported and distorted.

From SRI to SIR: The Birth of a Movement

Hyman visited SRI in December 1972. The impression he came away with was one of disaster.

"I never was able to clarify just what Targ's mission at SRI was supposed to be," he wrote in a detailed thirteen-page report that he sent to Martin Gardner.

> Officially he and Puthoff are supposed to work on laser applications. In fact, he spends all his time on parapsychology, apparently with the blessings of the other scientists and staff. One "scientist" who I talked to briefly suggested that Targ and Puthoff were designated as laser physicists in their job descriptions, merely as a cover. Doing research in psychical phenomena is a sensitive matter and SRI's venture into the supernatural might not be met with compassionate understanding by either the public or the contractors (Ray Hyman letter to Martin Gardner, December 12, 1972).

Hyman found the research sloppy and uncontrolled. "The records they showed me of their 'experiments' with Geller were the most uncontrolled and poorly recorded data I have ever encountered," he told me years later (Ray Hyman email to author, March 16, 2014).

That's how it all began: a few informal meetings at Gardner's home in Hastings-on-Hudson, New York, led to the formation of SIR—Sanity in Research, or Scientists in Rationality (Shermer 1998), depending on who you asked—which would eventually evolve into CSICOP.

But that's a story for next time.

After all, as Ray Hyman once told me with a grin: "Uri Geller should be given credit for doing a lot of things. Including the whole skeptical movement as we know it today."

And who knows? Maybe, deep down, even Geller is secretly proud to have been the spark that started it all. ■

Note

The story will continue in my column in the March/April 2026 issue of Skeptical Inquirer.

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[BEHAVIOR & BELIEF STUART VYSE

Stuart Vyse is a psychologist and author of *Believing in Magic: The Psychology of Superstition*, which won the William James Book Award of the American Psychological Association. He is a fellow of the Committee for Skeptical Inquiry.

Improving Psychological Science through Adversarial Collaboration

According to an annual Pew Research Center poll, confidence in scientists has declined since the pandemic (see Figure 1). Those who reported having "not too much/none at all" confidence in scientists to "act in the best interests of the public" increased from a low of 12 percent in April 2020 to a high of 27 percent in October 2023, but the overall results obscure that the leakage is far from balanced across political party lines (Tyson and Kennedy 2024). Republican and Republican-leaning respondents showed an over twenty-percentage-point increase in distrust of science between early 2020 and October 2023, while Democrats and Democratic-leaning respondents remained relatively stable in their support for scientists, showing a slight increase in trust during the early months of the pandemic. To make matters worse, Robert F. Kennedy Jr. is now the U.S. Secretary of Health and Human Services, giving him the power to conduct what Celine Gounder, professor of medicine at New York University, has called "a war on science" (Stone 2025).

Long before the pandemic, psychology experienced its own integrity problems when the replication crisis (a.k.a. the reproducibility crisis) emerged approximately twenty years ago (Ioannidis 2005; Korbmacher et al. 2023). For decades, classic psychology studies had been treated as established truths and memorialized in textbooks, but in many cases, no one had ever bothered to see whether the original research findings could be reproduced by different investigators using the same procedures. Eventually, when large-scale high-quality efforts to reproduce these classic findings were undertaken, the replication rates were shockingly low. For example, in one of the earliest studies involving 100 previously published effects, only 36 percent of the findings could be reproduced (Open Science Collaboration 2015). If the results of scientific research are not reliable, it is difficult to put much faith in them.

These revelations about the vaporous nature of research findings in psychology and other related disciplines produced some valuable reforms. The assumption was that, in many cases—either consciously or unconsciously—researchers had managed to fudge the design of studies and massage the numbers to steer the results in a direction that would produce the all-important statistical significance required for publication. As a result, when parties who were not invested tried to make the results happen again, they often came up with nothing. The Open Science movement was launched to bring sunlight to the research process and make this kind

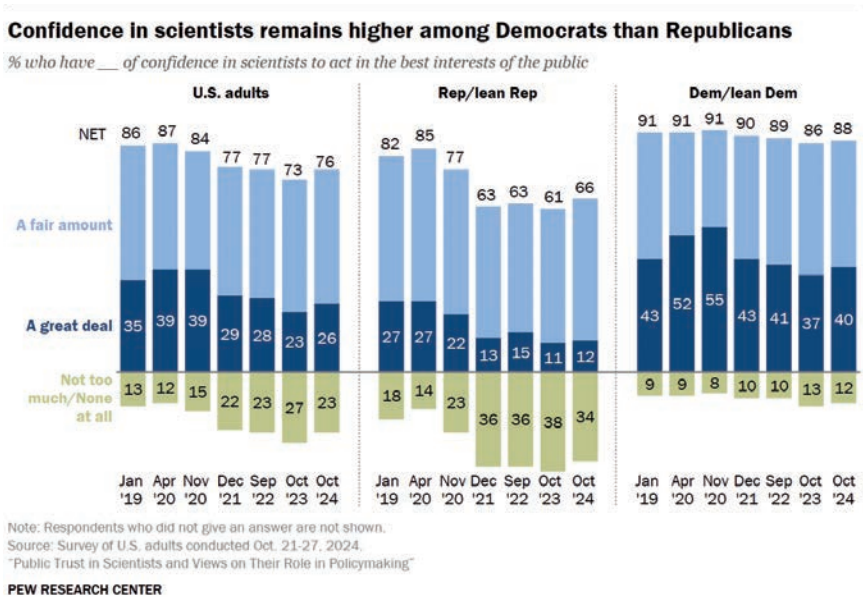

Confidence in scientists remains higher among Democrats than Republicans
% who have ___ of confidence in scientists to act in the best interests of the public
U.S. adults
Rep/lean Rep
Dem/lean Dem
NET
A fair amount
A great deal
Not too much/None at all
86 87 84 77 77 73 76
35 39 39 29 28 23 26
13 12 15 22 23 27 23
82 85 77 63 63 61 66
27 27 22 13 15 11 12
18 14 23 36 36 38 34
91 91 91 90 89 86 88
43 52 55 43 41 37 40
9 9 8 10 10 13 12
Jan '19 Apr '20 Nov '20 Dec '21 Sep '22 Oct '23 Oct '24
Note: Respondents who did not give an answer are not shown.
Source: Survey of U.S. adults conducted Oct. 21-27, 2024.
"Public Trust in Scientists and Views on Their Role in Policymaking"
PEW RESEARCH CENTER

Figure 1. Pew Research Center survey of U.S. adults' confidence that scientists act in the best interest of the public for the period between 2019 and 2024.

of manipulation more difficult. For example, many studies are now "pre-registered," which means that the hypothesis and the specific methods used to collect the data are stated publicly in advance of running the experiment. Any changes that are made along the way must be reported as well. Finally, when the data are collected, they are publicly posted along with the statistical methods that were used to analyze them. As a result, any researcher with a mind to do so can download the raw data and reanalyze the results (Open Science Center n.d.).

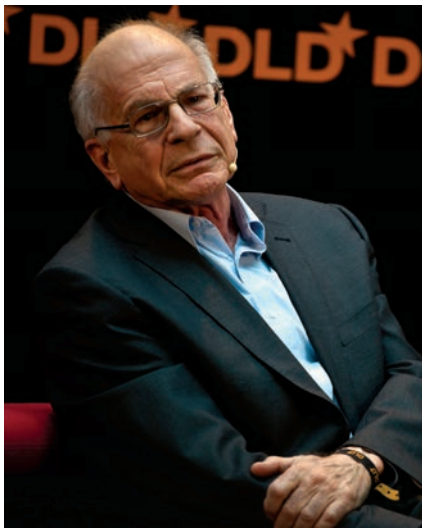
There is general agreement that the adoption of Open Science methods has greatly improved the reliability of research results, but reliability—though essential to good science—is not sufficient. It is quite possible to produce reliable results that are not valid. When teaching this idea in my classes, I often used the example of a bathroom scale that repeatedly and consistently gave my weight as eighty-five pounds. The scale would be reliable but not valid. I weigh slightly more than that. In the real world of science research, a troubling number of researchers are publishing studies that have questionable validity.

Before going further, I should point out that there are many issues of settled science that we and policy makers can rely on. For example, despite what you might have heard from other sources, childhood vaccines do not cause autism (Johns Hopkins Bloomberg School of Public Health 2025). But there are also many controversial issues in psychology and related disciplines where one researcher—or group of researchers—is consistently producing studies that contradict the results produced by other researchers. Both conclusions cannot be true, yet many academic careers have been based on conflicts like these. Furthermore, when groups differ, rather than seeking common ground the opponents often cling to their views until the representatives of one side retire or die, leading a group of economists who studied this pattern to say that "scientific progress advances one funeral at a time" (cited in Ceci et al. 2024).

Thankfully, a new methodology has emerged that may help.

Adversarial Collaboration

When Nobel Prize–winning psychologist Daniel Kahneman died in March 2024, Harvard law professor Cass Sunstein wrote that, in addition to his many contributions to the science of human judgment and decision making, Kahneman should be remembered for his commitment to collaboration with his professional rivals (Sunstein 2024). On several occasions when he had disagreements with other researchers, Kahneman, a famously nice person, initiated a collaboration with the competing researcher in a good-faith effort to settle the matter. As described by Sunstein, Kahneman and his Princeton University colleague Angus Deaton published a study showing that after a threshold of approximately $90,000, increasing income did not bring people additional happiness. Eleven years later, University of Pennsylvania researcher Matthew Killingsworth came to a different conclusion: happiness increased without limit as income increased. The researchers recruited the assistance of a neutral party and entered into a collaborative effort to look at each other's data and find a consensus. It turned out that both researchers had been partly wrong. For the most unhappy people, there was an income threshold after which additional income did not produce additional happiness. For the rest of the sample, happiness increased with income—with no limit. It was not that one side or the other was wrong; the truth was more nuanced than either side had previously understood.



Daniel Kahneman. Source: nrkbeta | Wikimedia.

Since Kahneman first popularized the idea of adversarial collaboration, this approach has been adopted by other researchers, and in 2021, a group of scholars launched the Adversarial Collaboration Project (AC Project) at the University of Pennsylvania (https://web.sas.upenn.edu/adcollabproject/). The AC Project website lays out the commitments researchers must make for the collaboration to work:

> (1) make good faith efforts to articulate each other's positions (so that each side feels fairly characterized, not caricatured); (2) work together to design methods that both sides agree constitute a fair test and that they agree, [in advance], have the potential to change their minds; (3) jointly publish the results, regardless of "who wins, loses or draws" on which topics.

The University of Pennsylvania group offers guidance to potential collaborators and, in some cases, offers research funding. Those who have entered into adversarial collaborations stress the importance of having a neutral arbiter involved in the process who can help avoid heated conflict and, on occasion, negotiate separately with each party.

Rather than being a slam dunk for one side or the other, the outcomes of adversarial collaborations often produce a more nuanced view of the question. For example, Stephen J. Ceci and Wendy M. Williams of Cornell University entered into an adversarial collaboration with Shulamit Kahn of Boston University on the rather charged topic of bias against women in academia (Ceci et al. 2023). The researchers looked at six areas, all of which had been widely reported to be stacked against women: (a) tenure-track hiring, (b) grant funding, (c) teaching ratings, (d) journal acceptances, (e) salaries, and (f) recommendation letters.

Based on their report, it sounds as though these collaborators took substantial risks by going forward. The Cornell pair had never met Kahn before, and their collaboration took four and a half years to complete, spanning hundreds of emails and many Zoom meetings. But the outcome was successful, resulting in a peer-reviewed publication in a high-quality journal, and the findings were unexpected: "tenure-track women

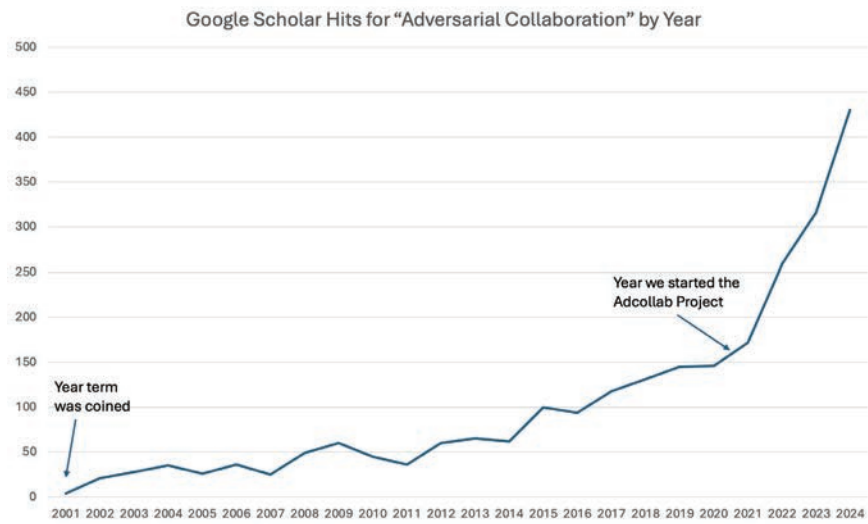


Figure 2. The number of sources found using the phrase "adversarial collaboration" in a Google Scholar search in the years since the term was first introduced. (Source: Cory Clark, Adversarial Collaborations Project, University of Pennsylvania. Used with permission.)

are at parity with tenure-track men in three domains (grant funding, journal acceptances, and recommendation letters) and are advantaged over men in a fourth domain (hiring). For teaching ratings and salaries, we found evidence of bias against women; although gender gaps in salary were much smaller than often claimed, they were nevertheless concerning" (Ceci et al. 2023, 1).

The adversarial collaboration movement is still quite new, but there are some early indications that it is both valuable and growing in popularity. The graph in Figure 2 was provided to Skeptical Inquirer by Cory Clark, the executive director of the Adversarial Collaboration Project at the University of Pennsylvania, and it shows a steep increase in the number of publications using the term *adversarial collaboration* found in Google Scholar searches, especially during the years since the University of Pennsylvania project was launched.

An early qualitative evaluation of adversarial collaborations looked at the experiences of twenty-nine researchers who were involved in thirteen different collaborations (Isch et al. 2025). In an important measure of success, all but two of the researchers said they would be willing to enter into another adversarial collaboration, most expressing eagerness to do so. The consensus view suggested that success requires a degree of intellectual humility among the participants and a willingness to change one's belief. Despite this, the collaborations almost never produced a change of beliefs in the collaborators. Instead, positive outcomes involved a better understanding of the limits of the claims being made. But it seems clear that, when researchers are more interested in getting at the truth than defending their pet theories, adversarial collaboration can help scientists make measurable progress.

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Nuanced messages create a challenge to the status of science in the public square. When describing the relationship between income and happiness, either of the previous messages—"happiness increases with greater income up to a threshold" or "happiness increases continuously with rising incomes"—would be far easier to communicate than "happiness rises to a threshold for some people but continuously for others." Similarly, "there is a bias against women in academia" is a much simpler story than "the academic world is biased against women in some areas, in favor of them in others, and not biased at all in still others." But researchers who cannot agree on the facts of important issues also reflect poorly on the value of science. Two mutually exclusive views of a problem cannot both be true at the same time. As a result, even if the answer more often becomes, "it's complicated," science must go where the truth is. There is no alternative.

Adversarial collaborations are challenging, and some investigators may be reluctant to participate. But when adversarial collaborations succeed, researchers are forced to reconsider their prior positions, and the resulting publication is likely to have greater than average impact. The nascent adversarial collaborations movement is a very positive development for psychological science and related disciplines. Thank you, Professor Kahneman. Let's hope it continues to grow. ■

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CRAIG A. FOSTER

Craig A. Foster is a CSI fellow and director of research and evaluation at Northshore School District in Bothell, Washington.

The Red Planet Rumble: Claimer vs. Claimer

Welcome aboard, friends! In *The Time Warp*, we aren't limited to present-day examinations. We use Skeptical Inquirer's rich history to examine skepticism … from the future. On this journey, we travel to the final issue of the 1970s: Winter 1979/1980 (Vol. 4, no. 2).

Some beats to get you rockin' to the rhythm: The SugarHill Gang's "Rapper's Delight" brought rap to mainstream popularity (charting on January 5, 1980). The Soviet Union invaded Afghanistan (December 25, 1979). *Kramer vs. Kramer* was released to critical acclaim (December 19, 1979).

And the Skeptical Inquirer was there promoting science and reason. How often? Only all the time.

Skeptical Thoughts from the Time

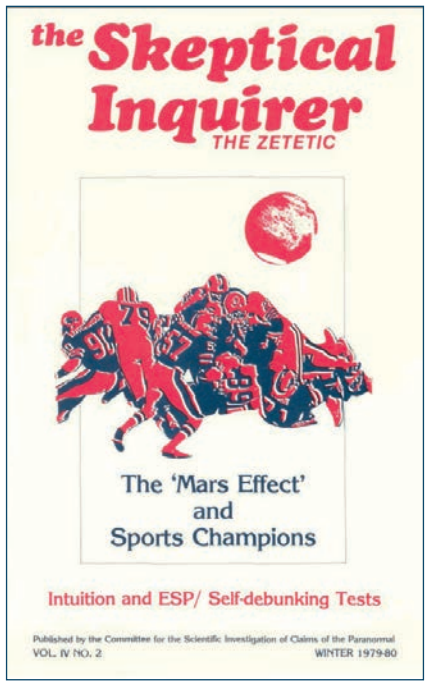
In *How I Was Debunked*, Piet Hein Hoebens described his participation in a psychokinesis test. Researchers used "the Edinburgh Split" to demonstrate that apparent success in one half of the test didn't replicate in the other half.

Martin Gardner explained how Professor John Taylor, author of *Superminds*, was tricked into promoting the paranormal. Taylor later returned to more conventional beliefs.

Gary Bauslaugh argued that parapsychology degrades the way people create meaning out of human existence by imposing rational principles on intuitive-mythic vision.

Inviting Paranormal Voices

The three feature articles followed the typical Skeptical Inquirer approach. Skeptically minded authors examined paranormal promotions. Then, the issue took a different turn. One of the four articles examining an astrological claim


the Skeptical Inquirer
THE ZETETIC
The 'Mars Effect' and Sports Champions
Intuition and ESP/ Self-debunking Tests
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was authored by two of the claim's supporters, Michel and Francoise Gauquelin.

The Gauquelins claimed that being born when Mars was in the first or fourth of twelve sectors increases the probability of becoming a sports champion. The Gauquelins used 2,088 European sports champions to support "the Mars effect."

Skeptics were not convinced. Tying the Mars effect to only the first and fourth of twelve sectors looks like fitting a claim to random statistical fluctuation. Critics also raised concerns that the reported strength of the Mars effect was possibly boosted by including more athletes with birthdates that supported the Mars effect rather than a truly random sample.

Skeptics and the Gauquelins put the Mars effect to a new test using U.S. athletes. The replication failed.

The Gauquelins responded by claiming the replication was improper because the Mars effect only works for "natural births" and "the greatest names in the history of American sports" (p. 32). The Gauquelins argued that the results support the Mars effect *if* one changes the sampling to include more specific groups born before 1950.

The four articles, along with two follow-up articles published in the Summer 1980 issue, summarize an impressive level of empirical examination—all devoted to whether an intermittent interplanetary force unknown to physicists, biologists, and psychologists somehow improves athletic performance for the highest echelon of naturally born athletes.

Personally, I think the most interesting aspect of the Red Planet Rumble is that skeptics *and* their argumentative opponents were dropping bars about Mars. Skeptical Inquirer authors had, to that point, consistently championed a skeptical point of view. If there was an exception, I can't think of it now.

The inclusion of articles authored by the Gauquelins highlights a debate that permeates skepticism: Should skeptics give argumentative space to those who promote, according to skeptics, credulous claims?

This question rocked CSICOP from the start. Marcello Truzzi, the original editor, imagined this magazine—formerly known as *The Zetetic*—as a place where skeptics and paranormal believers would crow at each other as part of scientific investigation into paranormal claims.

That didn't happen, and Truzzi resigned after the second issue. Truzzi's concern that skeptics were too quick to dismiss paranormal claims was appar-

ent years later in Truzzi's commentary *On Pseudo-Skepticism* (see https://www.anomalist.com/commentaries/pseudo.html).

Ouch. Skeptic vs. skeptic.

Recently, the conundrum of inviting pro-credulity arguments was raised within our regional group, Seattle Skeptics and Science Enthusiasts. At issue was whether the group should invite a potential speaker who was likely to promote credulity.

The main argument in favor of invitation invoked the idea of pseudo-skepticism. Essentially, it's hypocritical for avowed skeptics to be unwilling to listen to an opposing point of view. Others countered that skeptics are not obligated to hear the same tiresome arguments in perpetuity and that woo peddlers can use invitations to bolster their credulous promotions.

The speaker was not invited.

Skeptical Inquirer has generally stuck with the skeptical-narrative-is-the-best-narrative view. Across fifty years of SI, the published material overwhelmingly provides a skepticism-friendly perspective.

Is skeptical arrogance driving the omission of pro-paranormal authors? Alternatively, are paranormal-friendly authors missing because their arguments are frequently convoluted, stale, or harmful?

Post-Warp Summary

Looking back, I think the inclusion of the Gauquelins was a success.

The four-part series presented skeptics as being evidence-based, and the failed replication forced the Gauquelins to put pseudoscientific tricks on display.

Even so, I'm not advocating that we invite Robert F. Kennedy Jr. to the fiftieth anniversary celebration.

The Gauquelins were included as part of a scientific investigation into the Mars effect, as Truzzi imagined. That constraint kept the focus on the evidence, or lack thereof, related to the Mars effect.

Unfortunately, woo promoters are often unwilling to submit their paranormal promotions to legitimate scientific examinations. It's a credit to the Gauquelins that they were willing to do so. The contemporaneous New Zealand levitators, for example, weren't so interested in scientific scrutiny.

It's a shame that disagreement about the value of controlled examination thwarts opportunities to examine claims collaboratively. Besides, what if skeptics turn out to be wrong? Imagine the scientific upheaval that would follow the establishment of Mars's non-sinusoidal periodic vaginally born drug-free baby-zapping power. It would be better to get in on something like that up front!

In the absence of scientific collaboration, I don't see any clear answer for when skeptics should give argumentative space to the seemingly credulous. The arguments for and against invitation are solid, so skeptics probably just need to sort it out on a case-by-case basis.

But skeptics do need to listen sincerely to the arguments in favor of the claims we scrutinize; a skeptic who doesn't understand their opponent's argument doesn't fully understand their own. Skepticism is a commitment to reason and evidence, not an immutable set of beliefs. Our shared belief in skepticism is a two-edged sword. It builds community around skepticism but puts that community in danger of being too sure of itself—pseudo-skepticism.

So even if we aren't inviting Alex Jones to give his defamatory account of things, we still need to listen to concerns that some of the claims skeptics promote could be misguided or even wrong. We can achieve this by listening authentically to criticism of skepticism, regardless of whether that criticism comes from outsiders or insiders.

In this way, scientific skepticism is a curious affair. It's the paradox of being skeptical about skepticism that keeps us married to our own principles. ■

[INSIDE IMMUNITY ANDREA LOVE

Andrea Love, PhD, is an immunologist and microbiologist and works full-time in life sciences biotechnology. She is an award-winning science communicator and the founder of Immuno-Logic, a science education and consulting organization. Love is also the executive director of the American Lyme Disease Foundation and teaches CME courses for medical professionals. Find her on social: @dr.andrealove (YouTube/Meta) | @dr_andrealove (X/Twitter) or at www.immunologic.org.

Organic Is the Wellness Industry of Agriculture

The organic farming and food industry is based on clean-food ideology, chemophobia, and the fantasy that "natural" is a scientific argument. It is born from the same wellness industry that sells detoxes, "clean" eating, supplements, and anti-chemical fearmongering, wrapped in conspiracy-lined distrust of scientific institutions and regulation. Organic is not a science-based food system; it's a belief system. Just like the wellness industry, it undermines science, harms public health, deepens inequality, and drives policy that prioritizes vibes over evidence.

People believe organic is the *opposite* of anti-vaccine ideology. It isn't; it's cut from the same cloth. Anti-vaccine ideology praises "natural immunity"; organic advocates praise "natural farming." Anti-vaccine ideology fearmongers about "toxins" in vaccines; organic activists do the same for "toxic pesticides." Anti-vaccine ideology demonizes "Big Pharma"; organic crusaders vilify "Big Ag." Same tactics, different targets.

Organic farming is not safer, not more nutritious, not better for the environment, and not pesticide-free (Komati et al. 2025; Dangour et al. 2009). It is just marketed to make you feel that way.

The National Organic Program (NOP) was not created for safety, health, or sustainability; it was created in 1990 as a marketing standard (Agricultural Marketing Service n.d). It is the agricultural counterpart to the 1994 Dietary Supplement Health and Education Act (DSHEA). DSHEA removed FDA safety oversight of dietary supplements; the NOP did the same for "natural" farming methods. Neither require proof of safety or benefit, but both fuel profitable industries; organic farming is 22–35 percent more lucrative than conventional (Crowder and Reganold 2015).

NOP is ideology, not science. There are no standards for pesticide toxicity, nutritional impact, environmental footprint, or worker safety to get that organic label. It simply bans "synthetic" farming tools while rubber-stamping "natural" ones, even when those natural options are more dangerous (Agricultural Marketing Service n.d.). In contrast, conventional farming tools adhere to rigorous scientific safety standards and regulatory rules. Just like the supplement industry, organic farming is less regulated than its conventional counterpart yet pretends to be superior.

Natural Does Not Equal Safer—Even for Chemicals Designed to Kill

The organic industry has convinced people for more than thirty-five years that organic means no pesticides. This is objectively false. Organic farming uses a lot of pesticides. A non-exhaustive list includes copper sulfate, sulfur, pyrethrins, 20 percent acetic acid, spinosad, copper hydroxide, copper oxide, peracetic acid, eugenol, hydrogen peroxide, boric acid, potassium silicate, and *Beauveria bassiana* (Agricultural Marketing Service 2024).

The difference? They're "naturally derived," which in science means absolutely nothing about their effectiveness or safety. Many organic-approved pesticides are more toxic and less selective because they are prohibited from chemical alteration to improve safety or specificity.

Copper sulfate, one of the most widely used fungicides in organic farming, is toxic at 300 milligrams per kilogram body weight (LD_{50} = 300 mg/kg[1]). It accumulates in the soil and groundwater and can be toxic to fish, aquatic life, and even humans at high enough doses. On the flip side, mancozeb, a synthetic fungicide used in conventional farming, is twenty-six times less toxic with an LD_{50} of 8,000 mg/kg, and it rapidly degrades in the environment (Wauchope et al. 1992). Yet mancozeb is demonized solely because it's synthetic, even though it is objectively safer and more effective.

Organic pesticides are typically less potent and less targeted, which means farmers must apply more per acre and more frequently than conventional pesticides to protect crops.

Eugenol (4-allyl-2-methoxyphenol), a clove-oil herbicide used in organic farming, is more than twice as toxic as glyphosate and requires ten times the amount per acre to control weeds. Farmers apply it up to six times per season, compared to one or two glyphosate treatments. The result is opposite to what organic marketing promises: more chemical load, more ecological disruption, more risk to farmworkers. And, ironically, because glyphosate has been targeted for nearly fifty years by anti-science activists, it is one of the most studied and safest herbicides to exist (Folta et al. 2024)

A chemical isn't safer because it "came from a plant." Toxicity has nothing to do with where a substance originated. It is based on chemical identity, route of exposure, dose, and mechanism of action. That's true for every substance,

1. LD_{50} is the amount of a substance required to kill 50 percent of a given sample population in a specified period of time; a lower LD_{50} means it's more toxic, because it takes less to kill half the population.

Fungicides control molds, mildews, and other fungal pathogens on plants, including on edible portions and fruits.

Compound	Organic or Conventional	LD_{50} (50% lethal dose)	Application Rate	Application Frequency	Total Applied Per Season
Copper sulfate	Organic	300 mg/kg	1–4 lbs/acre	3–6 times per season	3–24 lbs/acre
Copper hydroxide	Organic	1,000 mg/kg	0.5–2 lbs/acre	Every 7–10 days	8–32 lbs/acre
Elemental sulfur	Organic	2,000 mg/kg	3–10 lbs/acre	Every 7–10 days	48–160 lbs/acre
Mancozeb *ethylenebisdithiocarbamate manganese-zinc*	Conventional	8,000 mg/kg	1.5–3 lbs/acre	2–3 times per season	3–9 lbs/acre
Azoxystrobin *Methyl (2E)-2-(2-{[6-(2-cyanophenoxy)pyrimidin-4-yl]oxy} phenyl)-3-methoxyprop-2-enoate*	Conventional	>5,000 mg/kg	0.1–0.3 lbs/acre	2–4 times per season	0.2–1.2 lbs/acre
Captan *N-trichloromethylthio-4-cyclohexane-1,2-dicarboximide*	Conventional	9,000 mg/kg	2.5–5 lbs/acre	3–5 times per season	7.5–25 lbs/acre

Figure created by Andrea Love for Skeptical Inquirer.

abbreviations used: mg/kg = milligrams per kilogram body weight. lbs/acre = pounds active ingredient per acre of crop land.

pesticides included.

Organic Pesticides Are Unregulated

The National Organic Program (NOP) exempts "natural" products from the safety and regulatory requirements conventional pesticides must meet. It's the same wellness loophole we see in medicine: vaccines undergo extensive clinical testing, dose–response analysis, toxicology, and post-market surveillance, while supplements make health claims without proving safety or efficacy. If you wouldn't swap a vaccine with a "natural immune booster," why replace evidence-based crop protection with "natural" pesticides that don't have equal scientific standards?

Every conventional pesticide must pass toxicology and risk assessment before it is approved for use. The Environmental Protection Agency (EPA) sets enforceable residue tolerances (maximum residue levels, MRL) after all these are assessed: acute and chronic toxicity, carcinogenicity, developmental and reproductive toxicology, endocrine disruption potential, dietary and applicator exposure, environmental fate, and ecological impact (United States Environmental Protection Agency 2025). USDA's Pesticide Data Program (PDP) then monitors residues on finished food products annually to confirm real-world levels remain below EPA's safety thresholds, set 100–1,000 times lower than doses shown to cause harm.

On the converse, most pesticides approved for organic farming skirt all this evidence-based oversight. If a substance is "natural" or "nonsynthetic," the NOP permits it even without EPA tolerance-setting, residue limits, dietary risk assessment, or residue monitoring. This is policy based on the appeal-to-nature fallacy.

The difference between conventional and organic farming isn't "pesticides" versus "no pesticides." It's risk-based and regulated chemistry versus vibes-based and unregulated chemistry. It's the same false dichotomy that separates FDA-approved medicine from supplements and "wellness" cures. Nature happens to make botulinum toxin, asbestos, cyanide, arsenic, ricin, and snake venom, all of which are highly poisonous.

Organic policy hides risk; it doesn't reduce it. Less tested, less regulated, and often more toxic compounds get a pass because they're "natural," while safer, more targeted, more studied compounds are banned based on ideology. That isn't protecting health or the environment. It's legitimizing pseudoscience for profit.

Organic Foods Don't Have 'Fewer' Pesticide Residues; We Just Don't Test for Most of Them

Even well-intentioned people repeat the falsehood that organic produce has "fewer residues," so much so that even the American Academy of Pediatrics has adopted this as an official position. The problem? Most people don't realize that organic pesticide residues aren't monitored! People cite the USDA Pesticide Data Program (PDP), but the PDP monitors synthetic pesticides to ensure compliance with EPA tolerance limits. Because organic-approved pesticides are exempted from tolerance limits, the PDP does not test for them. When people claim organic food has "fewer residues," they have identified a data gap. You can't detect things you aren't testing for!

"Not tested" is *not* the same as "not present," yet the organic industry has been profiting off misleading people for decades. In reality, the PDP should reassure you that conventionally grown foods are very safe: over 99 percent of detected residues are well below safety limits.

Herbicides control weeds that would strangle crops pre-planting, at early emergence, or at key stages during growth.

Compound	Organic or Conventional	LD_{50} (50% lethal dose)	Application Rate	Application Frequency	Total Applied Per Season
Eugenol *(4-Allyl-2-methoxyphenol)*	Organic	2,650 mg/kg	9–18 lbs/acre	3–6 times per season	27–108 lbs/acre
Vinegar *(20% acetic acid)*	Organic	3,310 mg/kg	44–88 lbs/acre	4–8 times per season	176–704 lbs/acre
Pelargonic acid *(nonanoic acid)*	Organic	5,000 mg/kg	7–50 lbs/acre	8–12 times per season	56–600 lbs/acre
Glyphosate *(N-(phosphonomethyl)glycine)*	Conventional	5,600 mg/kg	0.9–2.7 lbs/acre	1–3 times per season	0.9–8.1 lbs/acre
Glufosinate ammonium *(ammonium 2-amino-4-hydroxy(methyl)phosphorylbutanoate)*	Conventional	2,000 mg/kg	0.5–0.8 lbs/acre	2–3 times per season	1.0–2.4 lbs/acre
Mesotrione *(2-[4-(methylsulfonyl)-2-nitrobenzoyl]cyclohexane-1,3-dione)*	Conventional	2,000 mg/kg	0.094–0.16 lbs/acre	once, before crop emergence	0.094–0.16 lbs/acre

Figure created by Andrea Love for Skeptical Inquirer.

abbreviations used: mg/kg = milligrams per kilogram body weight. lbs/acre = pounds active ingredient per acre of crop land.

'Not as Bad as Anti-Vax' Is a Cop-Out: Organic Is Harmful

When I point out that organic ideology and anti-vaccine ideology share the same playbook, I'm often told, "But buying organic doesn't hurt anyone." Except it does. Organic ideology damages the environment, undermines food security, increases food costs, and harms public health.

Organic yields are 10–30 percent lower than conventional farming. Lower yields require more land to grow the same food—meaning more deforestation, more habitat loss, and more greenhouse gas emissions. Modeling shows that large-scale organic farming adoption would increase greenhouse gas emissions by approximately 20 percent from land use change alone (Smith et al. 2019). The European Union's 2020 Farm to Fork plan—which aims to cut (conventional) pesticide use in half and double organic acreage by 2030—is estimated to cause 20–30 percent yield losses, food price increases up to 30 percent, and greater land pressure (Barreiro-Hurlé et al. 2021; Beckman et al. 2020).

We've seen these consequences already. In 2021, The Sri Lankan government banned all synthetic fertilizers and pesticides to force a nationwide switch to "100% organic." The result? Agricultural collapse, economic instability, and a food crisis. Rice yields fell by 30 percent, tea by 18 percent, food prices skyrocketed, and the economy spiraled. The outcome was so catastrophic that the government reversed course within seven months, which was already too late (International Monetary Fund 2022).

The Sri Lankan government later admitted the policy had a "worse-than-anticipated impact on agricultural production" (International Monetary Fund 2022). Translation: every scientific and economic expert warned them, and they ignored data anyway. When governments make policy based on beliefs instead of evidence, the outcome is inevitably harmful.

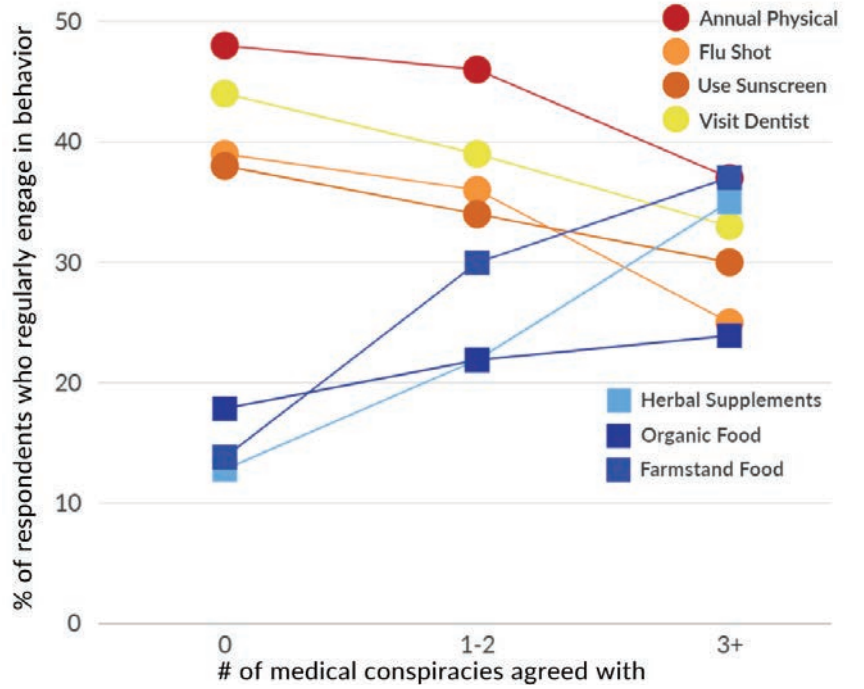
Organic ideology erodes public health by fixating on imaginary risks while worsening real ones. The Environmental Working Group's "Dirty Dozen" list manipulates the PDP report to scare people about more affordable, nutritious produce that don't actually have harmful pesticide residues on them while conveniently ignoring that organic pesticide residues aren't monitored (Love 2025).

Trace pesticides aren't hurting people; scaring them from eating produce is. Ninety percent of Americans don't eat enough fruits and vegetables, and unfounded fear of pesticides exacerbates that, especially for low-income households (Lee et al. 2022; Huang et al. 2016). Telling people they are poisoning their families if they eat conventionally grown produce objectively worsens health. This tactic from the organic industry is the nutritional equivalent of anti-vaccine propaganda: create fear of a fake threat to drive people toward a real risk (Winter and Katz 2011).

Organic ideology harms farm workers too. Rejecting conventional herbicides means increased tillage and hand-weeding, which leads to more injuries, more exploitation, more soil erosion, and more greenhouse gas emissions from farm machinery. Rejecting conventional insecticides and fungicides means less effective, more ecologically damaging, or more toxic alternatives must be handled and used (Bahlai et al. 2010). The anti-science principles of organic farming don't improve health or sustainability; they just give wealthy consumers moral superiority.

Organic ideology is directly tied to medical conspiracism along with the anti-vaccine movement and wellness pseudoscience. They originate from the same anti-science narrative: fear of "toxins," distrust of regulators, hostility toward bio-

RELATIONSHIP BETWEEN MEDICAL CONSPIRACISM AND SCIENCE-BASED HEALTH BEHAVIORS



Circles represent science-based health behaviors. Figure by Andrea Love using data from Oliver and Wood 2014.

technology, and outsized faith in the "natural" label. People who believe falsehoods about pesticides, GMOs, "chemicals," or "toxins" also reject vaccinations, seek unproven cancer treatments, and refuse evidence-based health behaviors (Oliver and Wood 2014). This is not a coincidence.

You can't be pro-science and pro-organic the same way you can't be pro-science and anti-vaccine. Both come from anti-science, chemophobic, anti-expertise, "nature knows best" ideology. Both replace risk assessment with moral panic. Both harm society. Organic is not the "healthy" choice; it's the agricultural arm of the wellness-industrial-complex that undermines trust in science and profits from fear.

If you care about public health, sustainability, food security, or scientific integrity, the responsible position is to reject organic ideology outright. Not to excuse it. Not to "agree to disagree." Reject it. Wellness-based agriculture is no more acceptable than wellness-based oncology or wellness-based immunology. Science isn't something you get to apply in healthcare and abandon in the grocery store. If you support evidence-based medicine, then support evidence-based agriculture. Anything less is anti-science hypocrisy. ■

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[SKEPTICAL INQUIREE BENJAMIN RADFORD

Benjamin Radford is a research fellow at the Committee for Skeptical Inquiry and author or coauthor of fourteen books, including *America the Fearful: Media and the Marketing of National Panics*.

Ethical Issues in Ghost Investigation

Q: **On television, ghost hunting seems harmless, but do you have any ethical concerns about it? Are ethics even discussed among ghost hunters?**

—A. Soichet

A: Hunting for ghosts is not like hunting for truffles, shipwreck treasure, or anything else known to exist. Because their existence is unproven, the defining characteristics of ghosts are unknown, and therefore it would be difficult or impossible for ghost hunters to know for certain that they had successfully captured a ghost. This factor weighs on the question of ethics because (unlike ghosts) the rewards of other searches are known, and any risks involved can be compared. The context of the question is revealing, because television and YouTube are the main mediums through which the average person encounters "real" depictions of ghost hunting. While it's a popular (if niche) hobby, few people actually encounter paranormal investigators unless they seek them out or join groups.

Art by Lar DeSouza.

It's important to recognize that the term *ghost hunting* covers a diverse set of activities. It might include analyzing photographs of alleged spirits taken minutes (or decades) earlier; investigating claims at established ghost tourism locations (such as a haunted hotel, restaurant, or residence); and investigating occupied private homes believed to be haunted. I've done all three, and the potential for harm varies greatly by circumstance.

For example, if I spend the night in a haunted hotel, the risk of harm is minimal; the experience is essentially akin to visiting a theme park or theater. The property owners are providing the setting for ghost hunters to perform a legend trip. As long as they're not damaging property, whatever the ghost hunters do or find there is good for business (especially if they make YouTube or television content promoting the place as haunted). If they didn't see anything paranormal, well, the spirits weren't cooperating, but they can always try again another time. If they *did* find some evidence of ghosts—some orb, shadow, or cold spot—then that's all the more reason to return. Like a commercial haunted house, it's a stage for performance. If "haunted" locations were *actually* dangerous to paying customers and visitors, the property insurance coverage would be prohibitively expensive. Despite comically ominous multi-page

waivers required to enter the Zak Bagans Haunted Museum in Las Vegas, physical peril is among the least of the potential harms.

At the other end of the spectrum, ghost hunters going into a private home have the potential to do real harm to the occupants, in particular by reinforcing their fears and formally validating their ghostly encounters. This is especially true if the ghost hunters are inclined (or have incentive to) find evidence of ghosts—which is almost always the case. Though ghost hunters often adopt a pseudoskeptical position ("We're skeptics; we don't believe everything is a ghost"), genuinely skeptical ghost hunters such as those associated with the Committee for Skeptical Inquiry are neither inclined to, nor have financial incentive to, interpret ambiguous phenomena as evidence for the presence of spirits. We don't need to generate a steady stream of sensational ghost-adjacent content for video platforms, clicks, and ratings.

Ethical Frameworks

Formal conversations about ethics are sometimes accompanied by a few rolling eyes. Ghost hunters want to share spooky stories and walk around eerie places late at night in the dark; they like the fun, dramatic stuff—the "Boo!" moments. They're rarely interested in examining fundamental questions about the endeavor, such as whether ghosts exist at all or whether they might unknowingly cause harm to someone during one of their ghost hunts (Radford 2015).

I've taken three semesters of graduate-level ethics courses, required for each of my degrees (in psychology, education, and public health). This analysis is informed by ethical guidelines issued by the American Psychological Association and the American College of Physicians; my ethics coursework at the Geisel School of Medicine was especially robust, covering topics including the ethics of using cells obtained without informed consent from Henrietta Lacks (an African American woman) and questions of, for example, whether people with alcoholism should be prioritized for liver transplants. We discussed the thirty-two-page *American College of Physicians Ethics Manual*, covering informed consent, privacy, gifts, conflicts of interest, abuse of authority, peer review, and more. A brief overview will help offer context.

Ethical principles include:

- Autonomy (the moral value to support, facilitate, and respect self-determination and informed patient choice; the ethical grounding for shared decision-making)
- Nonmaleficence (the moral value to refrain from, avoid, and protect patients from harm, including physical, emotional, and financial harm; the concept relates to the historical reference in the Hippocratic Oath)
- Beneficence (the moral value to provide beneficial care; acting in the patient's best interest; promoting good. In healthcare, fulfilling such an obligation is based on providing only evidence-based interventions and procedures)
- Justice (the moral value to ensure the fair, equitable, and appropriate distribution of goods and resources. Related to this concept is an understanding that value should be derived from a service provided) (Sulmasy and Bledsoe 2019)

Arguably, all these principles could apply in some way to ghost hunters, but perhaps the two most relevant are to "first, do no harm" and second the obligation to use evidence-based practices. Specifically, "The physician should encourage the patient who is using or requesting alternative treatment to seek literature and information from reliable sources." To the extent that ghost hunting is analogous to alternative medical treatment and extending to our discussion of ghost hunting (with the ghost hunter replacing the doctor as the ostensible expert at diagnosing the problem and the experient as the patient seeking help and an explanation for the unexplained events), the analogy would be that ghost hunters who assert a supernatural explanation for a given unexplained phenomenon should ethically seek (or encourage the experiencers to seek) a second opinion from a qualified skeptic. This doesn't happen for obvious reasons, including that doing so might undermine the ghost hunter's investigation and credibility, even if it would help the situation and relieve the ghost-plagued person's distress.

A few issues ago, I dedicated my column to an in-depth discussion of problematic aspects of psychics' readings, including ethical concerns, raised by the documentary film *Look into My Eyes*. There is significant overlap between ghost hunting and psychics; many ghost hunting groups use psychics as part of their investigation, typically in attempts to communicate with the unseen spirits they assume are present. The psychics often relate snippets of biographical information about the ghost, which are then incorporated into the ghostlore.

The issue is not necessarily that ghost hunting is inherently unethical in some way but instead that because the activity is an informal hobby without a governing or accrediting body, pretty much anything goes. Even decades after ghost hunting became popular, there's still no consensus among ostensibly experienced ghost hunters on what ghosts actually are. Are orbs spirits? Are electronic voice phenomenon (EVP) actually voices of the dead? And so on. If they can't agree on the fundamentals, there's little hope they'd agree to a code of conduct, though some ghost hunting groups do formulate and advocate their own guidelines.

Ethical Issues

Though largely overlooked among casual ghost hunting groups, the subject has received occasional attention in the literature. One of the more comprehensive analyses was undertaken by Ian Baker and Ciarán O'Keeffe, published in the *Journal of the Society for Psychical Research*. They wrote:

> It should be stated that whilst certain investigations are conducted ethically and responsibly, there are currently no published, peer-reviewed guidelines that investigators and the public can refer to. There are potential ethical problems inherent in investigations of haunting experiences. These include, but are not limited to: free access to the experient's home; free-

> dom of movement for anything up to twenty-four hours at a time; potential distress for the experient; the investigator's and/or the experient's motivation for the investigation; and the lack of any formal recruitment or screening of group members. (Baker and O'Keeffe 2007)

U.K.-based ghost researcher Hayley Stevens, in a blog titled "The Ethics of Ghost Research," also examines the thorny issue of ethical conduct among ghost hunters:

> When investigating spontaneous phenomena, you will come into contact with all sorts of people who are both involved in the case and not involved in it. As a researcher (whether professional or amateur) the welfare of those affected by your research is paramount … This is why it is paramount that paranormal researcher organizations draw up a code of ethics to which organization members are to abide by while on location. (Stevens 2012a)

Stevens lists several categories of people who can be harmed by ghost hunters (and paranormal researchers more generally), including the recently bereaved, children, and vulnerable adults. She notes, "Adults who are not vulnerable can still be harmed by the actions of paranormal researchers … Many ghost researchers enter a location in the pursuit of 'evidence' that ghosts exist, this can not only misinform the people they come into contact with but it can scare them too and cause them to feel uncomfortable, unsafe or scared of their own home or place of work" (Stevens 2012b).

Indeed, I've personally seen this many times (see, for example, Radford 2010a), and Kenny Biddle described a case in Canada where the owner of a "haunted" house was told by a psychic that an image she captured on camera was that of a little boy who had drowned not far from her home. The woman went for months not being able to sleep in her own bedroom because that's where the supposed "boy ghost" appeared. The "boy" turned out to be an optical illusion (Biddle 2023).

Stevens interviewed C.J. Romer and Dave Wood, leading figures in the British parapsychology scene and coauthors of a paper on ghost hunting ethics. Romer said:

> I'd say it's almost certain that there are ethical issues that come up almost on a daily basis for anyone who is active within the field … You've got to bear in mind that even a trained social welfare professional will be working as part of a multi-agency task force, they'll be working as part of a team. You'll have a GP involved, and maybe social services, they may have contact with local clergy who deals with the faith of the family, with the housing officers, the hospital, maybe psychiatrists, perhaps a substance abuse teams … What happens with paranormal investigators is more like: *"Hello Ma'am, oh I'm sensing it already! It's a headless baby, it's horrible and disfigured, did you have a miscarriage? It's coming through the walls!"* I mean, I mock, but that kind of horrific scenario goes on out there. (Stevens 2012b)

In the same interview, Dave Wood, chairman of the Association for the Scientific Study of Anomalous Phenomena, agreed:

> Minor ethical issues crop up every weekend when paranormal investigation groups go out, most of which don't have ethical codes of any description. And from my own limited experience of seeing other groups, ethical issues crop up all the time and I think it's a big worry … They mean well and feel they're doing a good job, and they may do a good job in the way they investigate, but not having an ethical code and a grounded ethical way of doing things, statistically speaking you're going to have so many ethical issues coming up over the course of X number of cases you investigate. Unless you're prepared to deal with them, small amounts of harm are going to take place, you may not know they take place, you may go in, do an investigation, leave and never actually realize that after the event something takes place that causes harm to the family. (Stevens 2012b)

Indeed, some skeptics question whether ghost hunting itself is inherently unethical. Karen Stollznow (2009), for example, writes: "Creating a code of ethics obscures the fact that ghost hunting is the problem itself. The very beliefs, practices, claims, conclusions, and cures of ghost hunters are often unethical. Is it simply unethical for ghost hunting groups to investigate at all?"

Vulnerable Victims

The fact that people who believe they are plagued by ghosts, demons, or other unseen powerful entities are inherently vulnerable is often overlooked or minimized. Like those who reach out to psychics, they are a self-selected population who are easily manipulated. It's notable that the website for the hit TV show *Ghost Hunters*, T.A.P.S., specifically encourages private citizens who believe they are plagued by ghosts to contact them for help (in fact, the word *help* appears nine times on a single page on their website: "we can *help* you," "click for *help*," etc.). Those seeking help are, by definition, vulnerable, and those offering to assist them in any capacity—paid or volunteer—should have a code of ethics and best practices to be sure they are protected. In 2023, I asked Jason Hawes, star of *Ghost Hunters*, "What ethical responsibility, if any, do you feel when people watch your shows and wrongly believe their home is haunted, following your (pseudoscientific) methods?" Hawes gamely replied, "None."

Skeptical researchers often use the term *grief vampire* to refer to psychics, specifically psychic mediums. Anytime someone claims to speak on behalf of the dead—which all psychic mediums and most ghost hunters do—there is very real potential for exploitation. And, importantly, this is true whether or not the psychics and ghost hunters are sincere.

As Baker and O'Keeffe sagely recognize:

> The primary ethical issue in any investigation is that of vulnerability. The perceived superiority of an investigator and the often-traumatic nature of the original experience can make the experient vulnerable to influence or exploitation … The investigator should understand that an experient who requests help in understanding unusual phenomena is placing the investigator in a position of power that should not be abused … An intrinsic problem with investiga-

> tions is the fact that the majority are initiated when people interpret the phenomena they are encountering in terms of a possible paranormal cause. Anyone who suspects that a knocking behind a wall is caused by a problematic pipe will call in a plumber, but if they think the cause may be paranormal they will summon an investigator. So the experient and the investigator may well interpret the phenomena in radically different ways … The investigative process may also undermine or reinforce a particular belief, which implies an added responsibility to remain objective. (Baker and O'Keeffe 2007)

Other Harms

While the chief ethical concern about ghost hunting is the effect on the living, there are other, if indirect, harms. There's also the tarnished reputations of the dead. I have discussed this issue in several of my articles and investigations, including into the haunted KiMo Theater in New Mexico and Rose Hall Plantation of Montego Bay, Jamaica. In those cases, specific once-living people's family names have been tainted by their later inclusion in ghost stories. In my investigation into Rose Hall, I revealed that the evil woman widely claimed to haunt the mansion—Annie Palmer, the so-called White Witch—was in fact based on an innocent historical person. I asked readers to consider the feelings of others: "Imagine if, a century from now, due to some strange mix of myth and circumstance, people describe you as a cruel, perverted, sadistic serial killer. Psychics and ghost hunters claim to contact your spirit, and relay your sensational confessions to the public" (Radford 2010b). How would you feel to have your good name ruined by sensational, ill-informed ghost hunters who claim to contact your spirit and perhaps elicit a "confession" to murder, sexual abuse, or worse?

Kenny Biddle has also written about the harm that ghost stories can have, especially on the reputations of innocent historical figures. In a personal interview, Biddle told me that in one famous case

> Bathsheba, the main "demon" in the original *The Conjuring* film and in Andrea Perron's books, was a real person (1814–1885). The stories claim she was a witch, and most famously killed an infant by impaling it with a sewing needle in the base of its skull. The story also says there was an inquest, but she was cleared of charges. None of this is true—she was a real person, but by all records … she had nothing to do with the house/farm the Perron family lived in. Yet her gravestone was vandalized several times before it was broken in pieces.

Zak Bagans, the ghost-hunting star of the popular Travel Channel series *Ghost Adventures*, released music that he claims includes the voice of a television actor's ghost. He claims to have recorded the voice of actor David Strickland, best known for his role on the NBC sitcom *Suddenly Susan*, who died by suicide in a seedy Las Vegas motel in 1999. Bagans used this alleged EVP in an album titled *Necrofusion*. It's unclear how Strickland's family felt about his tragic suicide (fueled by the actor's drug addiction and mental illness) being exploited as entertainment by Bagans.

Recognizing the Need

Recognizing the potential for harm in a vocation is a prerequisite for developing a code of ethics, and from my experience most ghost hunters—like most psychics—seem unaware of or downplay the potential harm they might (however unintentionally) cause others. This is understandable, as the harmful consequences of ghost hunting rarely if ever appear on television shows or YouTube series. The shows are, after all, at least semi-scripted, occasionally faked, and carefully edited to make the ghost hunting team look professional, caring, and competent. Like successful psychics, they occasionally allow themselves to be seen failing or looking embarrassed or silly, which of course humanizes and endears them to their audiences. It is, after all, entertainment television.

Few ghost hunters have the training needed in psychology or counseling to adequately help people going through mental distress, and those are precisely the people who seek out help from ghost hunters. Few if any people are full-time professional ghost hunters; they have other jobs that pay the bills. Presumably many of those careers, from doctors to plumbers, have professional codes of ethics they are expected to be familiar with and adhere to. The issue is that because ghost hunting is seen as a fun, harmless, frivolous—and generally unpaid—pastime (television and YouTube stars being primarily entertainers, not investigators), they don't see any reason to apply ethical considerations to the field.

Neither psychics nor ghost hunters have any incentive to discuss the ways they can harm the very people they claim to help. The ways in which psychics can harm people is fairly well known; it's clear to the average person that fortunetellers and storefront psychics sometimes scam people out of fortunes. The financial harms are fairly well known, but the other ways in which psychics harm people, including psychologically, are largely unknown to the general public. The financial harm of losing $50,000 to a psychic scammer is easy to grasp, but the harm in having a psychic tell you that you are cursed or that your missing daughter is dead when in fact she's alive—or the reverse, that she will be found alive soon when in fact she's dead—is much more subtle. It's not a one-time event involving an exchange of cash in a paper bag scrawled with occult symbols held over a lit red candle but instead a series of psychological events over the course of days, weeks, or years, an eroding of sense of self, of trust, of agency over one's life. Though harder to quantify, these harms are no less real. The harm can be chronic, not acute, and is in some ways much worse. A scam victim might get their $50,000 back through court restitution or a generous friend. But a person whose sense of security and agency is lost may never get it back.

I and my skeptical colleagues are in a unique position to recognize the various harms done by psychics and ghost hunters because we have seen it firsthand. The casual viewer of television shows likely never sees the harm done, and neither do they see any mention or discussion of the potential for harm. To

the extent that these shows depict any danger or peril, it's framed as physical and spiritual, and the ghost hunters are the victims of demons and ghosts, not the perpetrators or perpetuators of harmful beliefs.

Many ghost hunters genuinely believe they are doing good and helping families, and indeed altruism is a strong motivation for ghost hunting. This subtle but powerful motivator helps explain why many ghost hunters are resistant to evidence suggesting that ghosts may not exist. If they entertain the idea that ghosts aren't real, that means the dozens or hundreds of spirits they helped find eternal peace were in fact imaginary, and the help they provided was only in their imagination. And if they do harm to real, vulnerable people, even unintentionally, in service of dealing with nonexistent specters, that's even worse. ■

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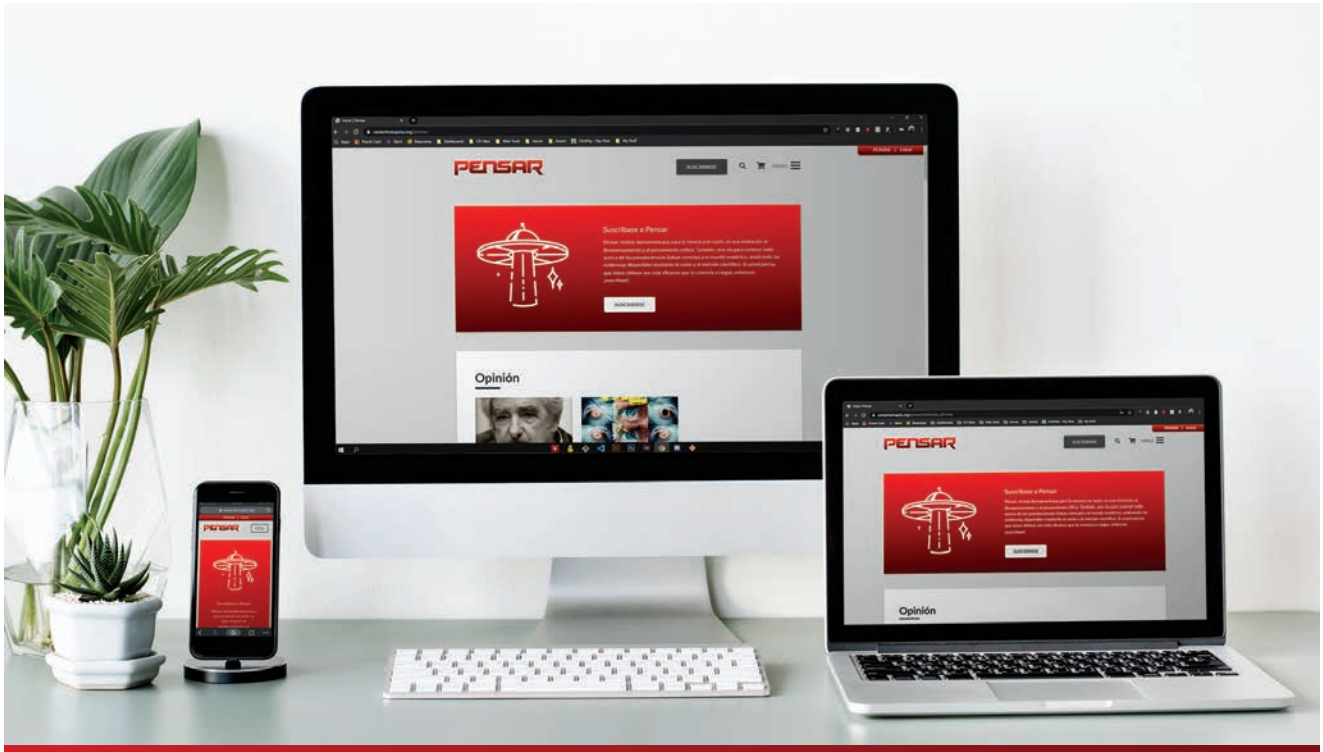

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We're Celebrating Our 50th Anniversary in Every Issue This Year

STEPHEN HUPP

This is the first of several issues celebrating the fiftieth anniversary of both Skeptical Inquirer magazine (formerly *The Zetetic*) and the Committee for Skeptical Inquiry (formerly CSICOP). In this issue, we're thrilled to have reflective pieces from James Alcock, Eugenie Scott, Massimo Polidoro, Richard Saunders, and Banachek (see my column on page 4 for more about each of these contributors). There's so much ground to cover that in each issue of SI this year, we will be celebrating our long and storied history in various ways. Many of those ways are already planned, but there's still room for more. If there's a particular story that you'd like to tell, please reach out! ■

Did You Notice?

The cover of this issue of Skeptical Inquirer includes one cover taken from each of the previous 49 years.

Fifty Years of the Modern Skeptical Movement

Peek into the first meeting that birthed the modern skeptical movement through the eyes of a scholar who was there.

JAMES E. ALCOCK

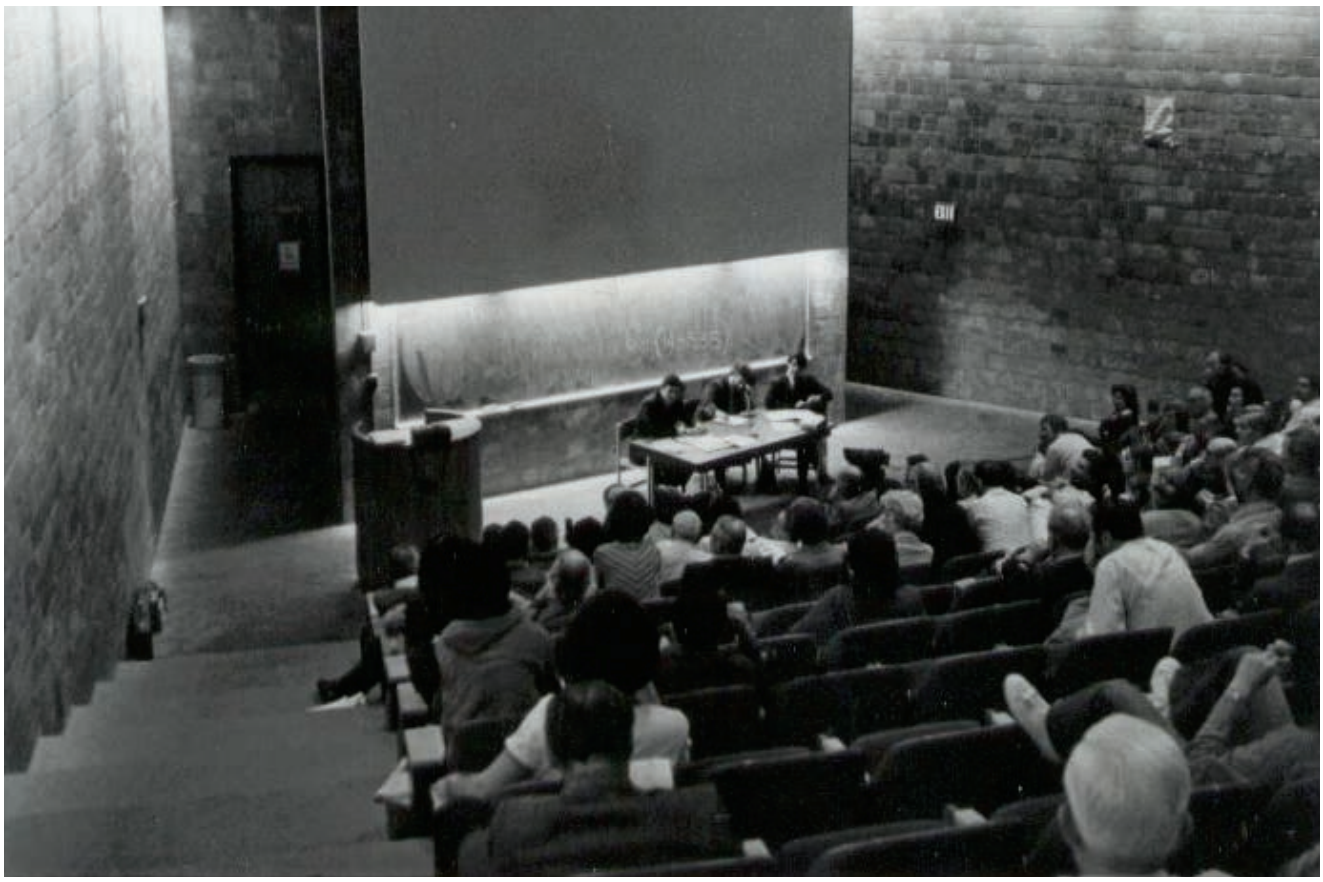
CSICOP meeting in 1976

A half-century ago, a rising tide of pseudoscience and paranormal belief swept the Western world. In response, a small group of scholars, magicians, science writers, and others—alarmed by the dearth of reaction from the scientific community—banded together to found the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP), now the Committee for Skeptical Inquiry (CSI). This marked the beginning of the modern skeptical movement. While the Committee's survival for fifty years is in itself a signal accomplishment and reason for celebration, one cannot fully appreciate the passion and urgency with which it was founded, nor comprehend the magnitude of its achievements, without first understanding the societal context in which it took form.

I know that context well; I was there.

Back in the Day

Interest in supposed paranormal phenomena has always been a part of the human experience, but the intensity of that interest has waxed and waned across the historical record. It waxed in the late nineteenth and early twentieth centuries when spiritualism, mediumship, and communication with the dead were all the rage. Séance parlors and psychics appealed to the general public, and the desire for contact with deceased loved ones was subsequently magnified by the gruesome casualty rate of World War I. Scientific interest in these putative phenomena had led to the establishment of the Society for Psychical Research, with its goal of establishing a scientific basis for paranormal claims. Fascination with the paranormal then waned during the thirties, forties, and fifties even while a small number of researchers continued with their parapsychological pursuits.



CSICOP meeting in 1976

But then came the sixties—a time both of great social ferment and relative affluence that freed many young people from the overarching need to pursue the creature comforts of life. The sexual revolution catalyzed by the arrival of the birth control pill; the New Age drug culture reflecting a widening acceptance of cannabis and psychedelics; the growth of the self-help movement; the liberalization of popular music and film from strict censorship; the growing movements to end racism and foster feminism and gay liberation; the declining influence of organized religion on young people; the significant threat of nuclear annihilation; and, in the United States, conscription and the war in Vietnam all served to catalyze the new values of the "hippie generation": Become more aware (i.e., "consciousness-raising"). Get in touch with your feelings. Don't trust anyone over thirty. Don't be a sheep; think for yourself. Make love not war. *Turn on, tune in, drop out*.

This was fertile ground for the proliferation of countercultural New Age quasi-religious "cults" typically organized around a male charismatic leader and often involving elements of occult or paranormal belief. The Branch Davidians, Children of God, Peoples Temple, Heaven's Gate, Unification Church (the "Moonies"), Jesus People, and the Order of the Solar Temple, along with other "new religions" such as Scientology and Hare Krishna, grew rapidly, as did the transcendental meditation movement that, among other things, claimed to be able to teach people to levitate—for a substantial fee!

At around the same time in the halls of academe, postmodernism began to bear influence, with many postmodernists arguing that there is no such thing as objective reality and that modern science is only a constructed view of reality, no more true or rational than alternative viewpoints such as those advanced by parapsychologists and occultists.

Add to this a tsunami of paranormal and occult claims about astral projection, reincarnation, astrology, extrasensory perception, faith healing, firewalking, exorcism, interplanetary visitations, and many other extraordinary phenomena. This interest was reflected at the bookstore: In 1965, *Books in Print* listed 131 books in the "occult and psychic" category, but by 1975 this number had mushroomed to 1,071! North American journals focusing on parapsychology and the occult also multiplied: *Ulrich's International Periodical Directory, 1968–1978* reported an increase from twelve to forty-six. On the other hand, literature critical of parapsychological and occult claims remained exceedingly scarce; scientists in general saw no reason to "waste time" critiquing claims that made no sense from a scientific point of view. And even though many undergraduate students were very curious about parapsychological phenomena, psychology textbooks of the day ignored the subject completely.

All but unchallenged, the tentacles of parapsychological belief attracted more and more adherents as they spread out in all directions.

Consider: By the late 1960s, significant numbers of North

From left to right: James Randi, Marcello Truzzi, and Paul Kurtz in 1976

Americans stricken with terminal cancer, diabetes, multiple sclerosis, or other serious ailments were spending large sums of money to fly to the Philippines for "psychic surgery," through which phony healers "magically" extracted blood and tumor tissue from the abdomen without actually penetrating the skin. The exploitation of these desperate people was profitable not only to the psychic surgeons but to some travel agencies as well. (In March 1975, the Federal Trade Commission ordered travel agencies to stop promoting psychic surgery tours to the Philippines.)

Consider: In the early 1970s, magician Uri Geller moved from Israel to the United States and soon gained celebrity status through his "psychic" feats, including mind-reading and spoon-bending, furthering interest and belief in the paranormal. As discussed below, his influence was far-reaching.

Consider: In 1973, the "channeling" craze exploded when psychic Sylvia Browne described her work with a "spirit guide" named Francine. Some of her many books ended up on the *New York Times* best-seller list. Not to be outdone, J.Z. Knight began to channel Ramtha, a supposed ageless warrior who had battled in Atlantis 35,000 years ago. Both Browne and Knight became fabulously wealthy through their television appearances and sessions with individuals eager to gain the wisdom of the spirits. Their success inspired a host of other mediums and channelers, each with their own spirit guides; one even channeled a dolphin!

Consider: While interest in past life regression began in 1952 when a hypnotized Virginia Tighe recalled her earlier life as Bridey Murphy living in nineteenth-century Ireland, this interest moved onto the main stage in the 1960s and 1970s after a (small) number of psychiatrists and psychologists pronounced they had solid evidence that the phenomenon was real. Psychologist Helen Wambach went beyond writing about it and held large events where members of the audience simultaneously underwent past-life regression (for a fee!).

Consider: In 1975, Raymond Moody coined the term *near-death experience* to describe experiences reported by people who had apparently momentarily died and then were drawn down a long tunnel, confronted by a bright light, and found themselves in the presence of deceased loved ones in heaven-like surroundings before finally feeling their spirit being wrenched back into their earthly bodies. His first book, *Life after Life*, set the stage for a plethora of other books and television programs focused on the subject.

Television talk shows and pseudo-documentaries promoted belief in such phenomena, often arguing that they were supported by scientific evidence. And many other "extraordinary" phenomena popped out of the ether to fascinate, entertain, and mislead. In 1965, Betty and Barney Hill reported that they had been abducted by aliens a few years earlier, in 1961. Their detailed accounts triggered numerous similar reports from across the United States (but only rarely from other countries). Alien abduction reports multiplied even further after Pulitzer Prize–winning Harvard psychiatrist John Mack deemed such reports genuine. Add to that the Bermuda triangle, "biorhythms," extraterrestrial cattle mutilations, and claims that the pyramids were built by aliens, and it became an exhausting list!

But the craziness did not stop there. It was reported that an American judge was using horoscopes as a guide to sentencing and that at least one major airline employed pseudoscientific "biorhythms analysis" as part of the assessment of its pilots' readiness to fly. And Geller's influence was so widespread that gatherings of some members of the U.S. Congress were held in which the participants attempted to bend spoons by the power of their minds.

The lure of the paranormal was so powerful that it seduced a few conventional scientists into shifting their research to the pursuit of paranormal phenomena. Physicist Helmut Schmidt claimed to have demonstrated that humans could influence the output of a random event generator simply by the power of their minds, and he argued that even animals had demonstrated a similar psychic ability to influence random events to obtain positive outcomes. Robert Jahn, Dean of Engineering at Princeton University, insisted that his research had likewise demonstrated that humans can manipulate the outcomes of a random event generator purely by wishing. Two other physicists (Russell Targ and Harold Puthoff) at the Stanford Research Institute were so impressed by Geller's supposed psychic ability that they studied him intensively, albeit rather carelessly, and announced that they had produced convincing evidence his psychic ability was real. They further claimed

evidence that ordinary people possess clairvoyant abilities for "remote viewing," empowering them to witness events occurring in far-off places. Their extraordinary findings were published in *Nature*, one of the world's leading science journals.

There seemed no end to the appeal of the paranormal. In 1970, the CIA initiated Project Stargate in an effort to harness remote viewing and extrasensory perception for intelligence gathering. And in 1981, after being made commander of U.S. Army Intelligence and Security, General Albert Stubblebine III instructed his battalion commanders to master the ability to bend spoons as well as perform other psychic feats by mind power alone. His greater goal was to develop a battalion of Jedi warriors who could turn themselves invisible, walk through walls, and use their psychic powers to kill enemy soldiers. General Stubblebine himself repeatedly attempted to levitate, shatter distant clouds by staring at them, and pass through walls by running at them at full tilt. Upon his retirement, he expressed disappointment at not having managed to go through walls, though he continued to believe that the ability was achievable.

The reader may now better appreciate why an organization such as CSICOP was so badly needed and why its founders were so charged with urgency, for the cauldron of pseudoscience was a-boil. With apologies to Shakespeare:

> Round about the cauldron go;
> In the Geller magic throw.
> Double, double toil and trouble;
> Fire burn and caldron bubble.
> Fillet of a psychic fake,
> In the caldron boil and bake;
> Postmodern flam and occult rot
> Boil thou first i' the charmed pot.
> For a charm of powerful trouble,
> Like a hell-broth boil and bubble.

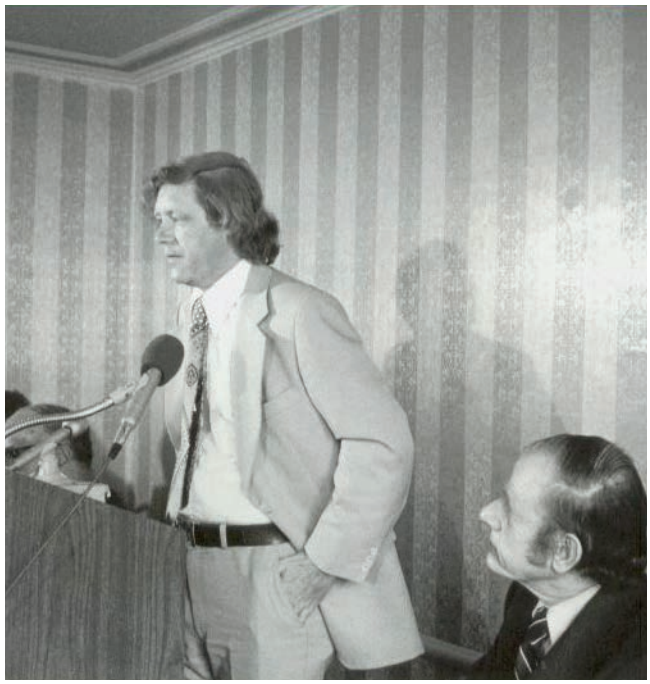
Powerful hell-broth indeed! As I wrote of that period:

> While it is easy for skeptics to turn a blind eye and a deaf ear to the generally one-sided media coverage of the paranormal, such a reaction leaves the public with no way to learn about the weakness of the paranormal position, no way to weigh the pros and cons of the arguments on each side. What is required is not shrill denunciation of parapsychology and its advocates, but coolheaded responsible defence of science and rationality. If we shrink from that task, let us not condescendingly blame the public for their belief of the paranormal. If only parapsychologists speak in the name of science, why should the public doubt them? (Alcock 1981, 189)

Ripples of Resistance

There were of course some isolated voices who stood up against the rising tide of nonsense. In the early 1970s, magician James Randi, inspired by Harry Houdini's efforts to expose psychics and other charlatans at the turn of the twentieth century, began his public campaign to challenge Uri Geller and show that his claims of paranormal powers were fraudulent. However, there was no organized response, no common front.

When I began to conduct research on the psychology of belief in 1974, having just begun my career as an experimental psychologist, I chose to focus on the astounding increase in belief in paranormal and related phenomena. I looked for



Paul Kurtz (right) listening to Ken Frazier (left) speak at CSICOP New York in 1976

others in academia who might share this interest and soon encountered relevant research published by sociologist Marcello Truzzi. He had recently begun publishing a newsletter, *The Zetetic: A Newsletter of Academic Research into Occultisms*, and invited me to join his network of people concerned about the increasing influence of pseudoscience, a network that included, among others, Isaac Asimov; Carl Sagan; B.F. Skinner; and Philip Klass, an aviation journal editor with substantial experience in exploring and explaining UFO reports.

At around the same time, another small nexus of skepticism had independently formed, involving Martin Gardner, Ray Hyman, and James Randi. Ultimately, as Truzzi announced in his newsletter in June 1975, these two groups came together:

> Plans are now underway for an innovative service in which our readership should have special interest. Martin Gardner (known to many of you through his regular articles in *Scientific American*), Dr. Ray Hyman (authority on pseudo-psychologies, a one-time professional mentalist … the "Amazing" (James) Randi (known to many of you for his replications of the tricks of pseudo-psychics on national television) and I are forming an association to be called *Resources for the Scientific Evaluation of the Paranormal* (RSEP) … The major purpose of RSEP will not be simply to "debunk" esoteric claims. Its major purpose is to investigate such claims from a purely scientific standpoint wherever that may lead. (Truzzi 1975a)

Yet despite their concerns about the rising tide of pseudoscience, they could do little except complain among themselves and whenever possible make individual efforts to engage the public. The combustible fumes of skepticism were there all right, but what was needed was someone with substantial organizational skills and motivation to light the match. That someone was Paul Kurtz, a prominent secular humanist philosopher and the editor of *The Humanist* magazine.

That same year, in 1975, Kurtz, astronomer Bart Bok, and science writer Lawrence Jerome published a statement in *The Humanist* titled "Objections to Astrology." The statement was originally endorsed by 186 scientists, including nineteen Nobel laureates. Kurtz subsequently sent the statement to newspapers across the United States and Canada, receiving a positive reception, which encouraged him to consider further action to combat pseudoscience. It also led to contact with Truzzi. Later that year, Truzzi informed his network:

> *The Humanist* magazine has initiated the formation of an organization tentatively titled "the *Committee to Scientifically Investigate Claims of Alleged Paranormal and Other Phenomena*" which basically strongly resembles our recently proposed group, *Resources for the Scientific Evaluation of the Paranormal*. Plans are now underway which will hopefully result in the joining of our two fledgling organizations. (Truzzi 1975b)

Ripples Become a Wave

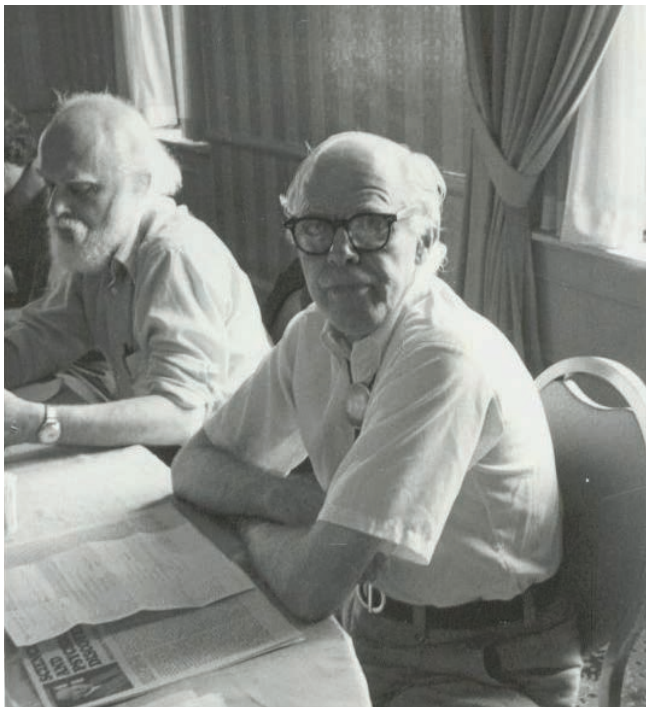
Paul Kurtz announced the founding symposium in this way:

> There has been an enormous increase in public interest in psychic phenomena, the occult, and pseudoscience … Often the least shred of evidence for these claims is blown out of proportion and presented as "scientific" proof … Perhaps antiscientific and pseudoscientific irrationalism is only a passing fashion; yet one of the best ways to deal with it is for the scientific and educational community to respond—in a responsible manner—to its alarming growth.
>
> With these thoughts in mind, we are forming an organization tentatively called the "Committee to Scientifically Investigate Claims of Paranormal and Other Phenomena" … to examine [such claims] openly, completely, objectively, and carefully.
>
> We do not yet know how large our committee will become or how ambitious its efforts will be … We have invited leading scientists and experts in many fields to join us in this important endeavor. (Kurtz 1977)

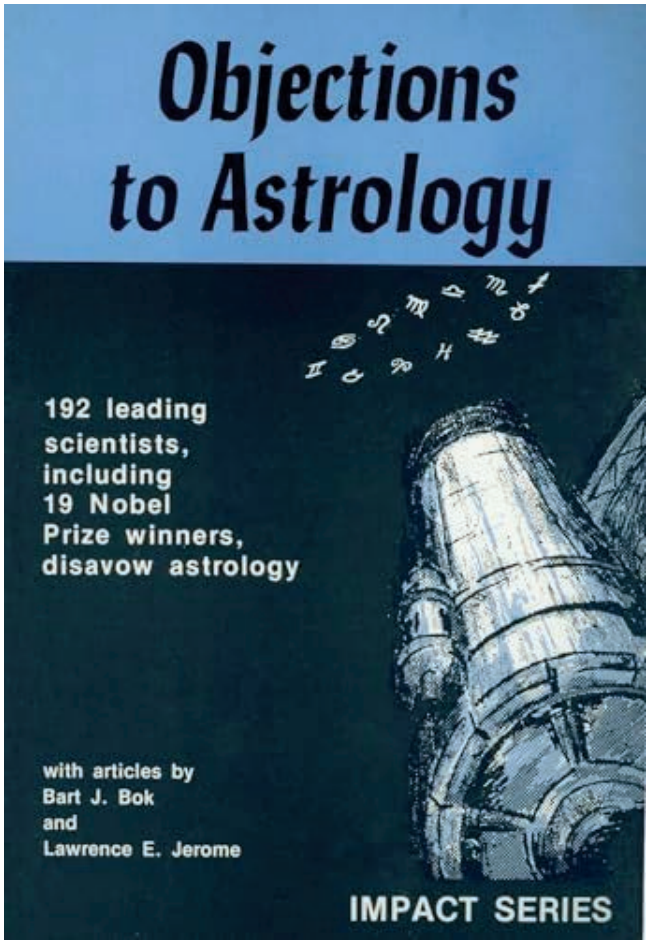
On May 1, 1976, a large lecture hall at the Amherst campus of the State University of New York at Buffalo was filled to capacity for the day and evening symposium titled "The New Irrationalisms: Antiscience and Pseudoscience." I listened as speaker after speaker addressed various areas of irrational belief, but it was the evening session that was particularly mesmerizing, as I have described elsewhere:

> The lecture hall at SUNY Buffalo is packed. The lecturer, a short man with a powerful voice, is at the podium performing astounding feats. Minds are read; spoons bend themselves; contents of sealed envelopes are divined. All this, we are assured, is accomplished through trickery like that used by "psychic" Uri Geller. Suddenly, a spectator rises to his feet and angrily shouts, "You're a fraud!" The lecturer, unfazed, responds, "Yes, I'm a cheat and a charlatan. Everything I am doing is by trickery; I am a conjurer playing the role of a magician." "That's not what I mean," counters the heckler as his wife tries desperately to pull him back into his chair. "You're a fraud because you're pretending to use trickery but you're using psychic powers and won't admit it." The speaker was, of course, Randi. And the heckler? A respected SUNY philosophy professor! What could be more fitting for the founding meeting of the Committee for the Scientific Investigation of Claims of the Paranormal than this demonstration of the polar opposites of belief? (Alcock 2021)

Members of the newly formed CSICOP Executive Council included Paul Kurtz, Marcello Truzzi, Martin Gardner, James Randi, Ray Hyman, Philip Klass, Dennis Rawlins, and Lee Nisbet, who was CSICOP's first executive director. Thirty-five scholars, magicians, and science writers—me among



James Randi (left) and Martin Gardner (right) in New York in 1976


Objections to Astrology
192 leading scientists, including 19 Nobel Prize winners, disavow astrology
with articles by Bart J. Bok and Lawrence E. Jerome
IMPACT SERIES

The "Objections to Astrology" statement was also published by Prometheus Books in 1975, and the number of endorsers rose to 192. The book included essays from Bart Bok and Lawrence Jerome.

AHA 35th CONFERENCE

PROGRAM

Friday, April 30

12:30 pm Registration, Spaulding Lounge (Ellicott Complex), Amherst Campus of SUNYAB

2:30—5:00 pm at Fillmore 170 in the Ellicott Complex

The Euthanasia and the Right-to-Die Controversy—National Commission for Beneficent Euthansia

The Legal Aspects and Individual Choice Regarding Medical Treatment—Paul Armstrong, attorney in the Karen Quinlan case

The Karen Quinlan Case and Human Rights—Marvin Kohl, professor of philosophy, SUNY at Fredonia

6:30—10:00 pm Awards Banquet at the Parkway Ramada Inn, Niagara Falls, N.Y.

DR. JONAS SALK (Humanist of the Year), director, Salk Institute for Biological Studies—Keynote Address: "Different 'Ways of Knowing'"

WILL AND ARIEL DURANT (Humanist Pioneer Awards), authors of *The Story of Civilization*

JAMES FARMER (Humanist Pioneer Award), civil-rights leader, founder of CORE, former assistant sec'y, HEW

PROF. ERNEST NAGEL (John Dewey Humanist Award), professor emeritus, Columbia University

Honorary Chairpersons: CORLISS LAMONT
Co-Chairpersons: BETTE CHAMBERS, pres., AHA
JOAN GAWN, pres., HAC

Note: Free transportation from Ellicott Complex to Ramada Inn for those who wish it.

Saturday, May 1 THE NEW IRRATIONALISMS: ANTISCIENCE AND PSEUDOSCIENCE

8:00—9:30 am Breakfast: Fargo Cafeteria

9:30 am—12:30 pm Fillmore 170

UFOs: Fact or Fantasy—Phillip J. Klass, author of *UFOs Identified* and *UFOs Explained*

Little Green Men from Afar—L. Sprague de Camp, author of 80 books, including *Citadels of Mystery* and *Lands Beyond*

ESP and Astrology—Dennis Rawlins, astronomer

Subjective Thinking—Marvin Zimmerman, professor of philosophy, SUNYAB

12:30—2:00 pm Luncheon: Fargo Cafeteria

2:00—5:00 pm Fillmore 170

Let's Hear It for Doomsday—Daniel Cohen, author of *Lost Worlds, How the World Will End,* and other books; former editor of *Science Digest*

The Flight from Reason—Charles Farr, author of *The New Nonsense*

Science, Witchcraft, and the Cults—Marcello Truzzi, professor of sociology, Eastern Michigan State University

Philosophies of Science—Ernest Nagel, professor emeritus, Columbia University; former president, American Philosophical Assn.; author of *Structure of Science* and other books

6:00—8:00 pm Dinner: Fargo Cafeteria

8:00—10:00 pm CONCLUDING SESSION, Fillmore 170

Uri Geller Debunked—James Randi, the magician

PANEL DISCUSSION

10:00 pm Cash Bar, Cocktails, Spaulding Lounge

Sunday, May 2

8:00—9:30 am Breakfast: Fargo Cafeteria

OPEN TO MEMBERS OF AHA ONLY

9:30—11:30 am Annual Business Meeting, American Humanist Association in Fargo Cafeteria

11:30 am—12:30 pm Chapter Assembly in Fargo Cafeteria

OPEN TO MEMBERS OF HAC ONLY

9:30 am—12:30 pm Annual Business Meeting, Humanist Association of Canada, Spaulding Lounge

12:30—1:30 pm Luncheon: Fargo Cafeteria

2:00—5:00 pm Sightseeing trip to Niagara Falls, both Canadian and U.S. sides

Program of the 35th American Humanism Association conference in 1976 in Buffalo, New York

them—were named as the first fellows of the Committee.

Truzzi subsequently explained, in a letter dated October 10, 1976:

> The Committee was originally the result of Professor Kurtz's concern with growing "irrationalisms" and their perpetuation by the mass media. … Upon contacting possible members, he discovered that I had already been involved in a similar network which included many of the persons he was contacting. I also had been publishing a newsletter for our network, called *The Zetetic* (the name referring to the skeptic philosophers following Pyrrho and the word meaning "skeptic" or "seeker" in English). Professor Kurtz asked me to co-chair the new committee with him and to edit the journal of the Committee. (Truzzi 1976)

The name of the organization was soon changed to the Committee for the Scientific Investigation of Claims of the Paranormal to avoid the suggestion that the organization was itself directly carrying out investigations. But without the founders realizing it, the acronym CSICOP cried out to be pronounced *psi cop*. Given that the Greek letter psi is widely used to refer to psychic phenomena, detractors quickly assumed that the title and its acronym had been deliberately chosen to reflect a motivation to police claims of the paranormal.

CSICOP immediately attracted attention, and approximately a thousand subscribers signed up for the first issue of *The Zetetic* (CSICOP's journal borrowed its name from Truzzi's newsletter). However, this new organization had brought together a variety of people, many of whom were strangers to each other, and so it is no surprise that differences soon emerged regarding how its mission should be carried out. One such difference emerged early on when it became clear that Truzzi wanted the organization to include both skeptics and proponents of parapsychology and intended the magazine to serve as an academic journal. Other members of the Executive Council disagreed, arguing that there were already several outlets for parapsychological viewpoints but no regular outlets for skeptical analysis and that what was needed was a channel for communicating skeptical analysis to the larger public. An academic journal would be unlikely to penetrate the public sphere. As a result of these differences, Truzzi resigned as editor and left the organization at the end of its first year. He went on to become an acerbic critic of CSICOP (although he and I retained a reasonable personal relationship). *The Zetetic* was renamed *The Skeptical Inquirer*, and science writer Ken Frazier, who had attended the foundational symposium, was appointed editor, a position he held until his death in 2022.

A year later in 1978, I was invited to sit in on the Executive Council meeting held in Washington, D.C. It was not long after that meeting that Dennis Rawlins, after expressing damning criticism of a further analysis of certain astrological claims by Kurtz and others, left the organization. Like Truzzi, he too became a strong critic of CSICOP. With his departure, I was invited to join the Executive Council.

Then in 1991, Geller launched the first of his libel suits against Randi and CSICOP, claiming that Randi had libeled him. To protect CSICOP from future litigation, Randi and CSICOP subsequently parted company, but good relationships continued between Randi and most individual members of the Executive Council. (In 2010, Randi made a return of sorts when he was named a fellow of CSI.)

In 2006, the Executive Council changed CSICOP's name to the Committee for Skeptical Inquiry (CSI). The shift to the new shorter label was in part due to the awkwardness of the original title and the fact that it was too often mistakenly taken to suggest that we were actually advocates of parapsychology, but it also was in recognition that the organization had shifted from a focus on paranormal claims to a wider target of extraordinary claims and irrationality in general.

Chalking Up the Wins

The world is quite a different place than it was at the time of CSICOP's founding when unchallenged and sensationalist paranormal claims prevailed in the media. The many hundreds of articles in the Skeptical Inquirer provide a wealth of readily available science-based information about all manner of supposedly paranormal, supernatural, or just plain weird phenomena. If a high school student is preparing an essay about psychic surgery, refer her to Skeptical Inquirer 46(1). Or when a journalist is writing about crop circles, refer him to Skeptical Inquirer 19(3). A friend believes that "psychic detectives" solve crimes? See Skeptical Inquirer 12(4) or 20(1). Bigfoot? Skeptical Inquirer 48(1). Roswell and alien autopsies? Skeptical Inquirer 19(6). Traditional Chinese medicine? Ghost photographs? Or just about any other paranormal, supernatural, or just-plain-weird phenomenon at odds with scientific understanding? It's all there in the Skeptical Inquirer. Add to that resource the influence of our annual conferences and the network of like-minded skeptics around the world.

Lee Nisbet, its first executive director, neatly summed up the goals of the Committee:

> CSICOP originated in the spring of 1976 to fight mass-media exploitation of supposedly "occult" and "paranormal" phenomena. The strategy was twofold: First, to strengthen the hand of skeptics in the media by providing information that "debunked" paranormal wonders. Second, to serve as a "media watchdog" group that would direct public and media attention to egregious media exploitation of the supposed paranormal wonders. An underlying principle of action was to use the mainline media's thirst for public-attracting controversies to keep our activities in the media, hence the public eye. (Nisbet 2001)

And CSICOP/CSI has accomplished those goals. Belief in the paranormal has not gone away of course, but it is no longer egregiously promoted by countless television programs, nor are there ongoing efforts by government agencies or corporations to harness paranormal powers, whether for commercial, medical, or military purposes. And excellent critical evaluation of virtually all paranormal claims is available in Skeptical Inquirer.

The Fab Four Plus One

Without the organizational skill, motivation, and energy of Paul Kurtz, the formal organization never would have been established, a bricks and mortar headquarters never would have been built, and a network of branches across the United States and around the world never would have developed.

Without the investigative genius and unparalleled showmanship of James Randi, the organization would have floundered both in exposing and explaining putative psychic phenomena and in commanding the attention of the media and the public. Without the scientific, statistical, and conjuring knowledge of Ray Hyman, it would have proved difficult for the Committee to establish credibility in scientific circles regarding critiques of parapsychological research. And without Ken Frazier, whom I have previously described as "the actual helmsman of the movement," Skeptical Inquirer would not have established itself as a highly credible source of information that unites skeptics around the world. And one must not forget the importance of Barry Karr, the executive director for most of the organization's existence, who shepherded us through good times and bad, setting up conferences, interacting with the media, sorting out conflicts, and protecting the Committee's mission and integrity as it moved under the umbrella of the Center for Inquiry.

These individuals played such important roles that members of the Executive Council worried for many years about succession. Could the organization maintain its gravitas, its credibility—more the point, could it even survive—without these exceptional leaders? Worry no more. We now have the answer, for the torch has been passed, the foundations have been maintained, and we have the prospect of being more effective than ever.

James E. Alcock at the organizational meeting that led to the formation of CSICOP in 1976

Today's Challenge

Fifty years ago, CSICOP was founded to fight the rising tide of irrationalism, a tide manifested through belief in psychic powers, alien abduction, and communication with the dead. As serious as the irrationalism was, it did not threaten science itself. Proponents, although critical of those few scientists who actually challenged their claims, respected science in principle and were eager to seize upon any scientific tidbit that might support their claims. And even though many postmodernists rejected the reliability and validity of scientific endeavor, their influence was never strong enough to jeopardize the pursuit of scientific inquiry.

But today's irrationalism with its challenges to science and reason is much more serious and sinister than what we dealt with a half-century ago. The challenge to science today, especially in the United States, is not to exploit its name to justify dubious claims but to oppose it altogether through funding cuts and outright attacks on its credibility. It is obvious that this retreat from reason comes at a particularly perilous time. The ravages of climate change, the alarming increases in mass migration, the combined threat and promise of artificial intelligence and humanoid robots, and the threatening growth of political authoritarianism and fundamentalist religions demand more than ever an approach based in science and reason. Instead, dogma and orthodoxy strive to rewrite history, unravel laws aimed at protecting democracy, and overturn scientific accomplishments while substituting conspiracy theories, "alternate facts," and magical thinking for reality and promoting nonsensical pseudo-remedies in place of science-based medicine.

This struggle to defend science and reason is going to be much more difficult than the one we fought against psychics and superstition. While our organization remains in capable hands to lead us on, we all have to do our part in the battle against this modern hell-broth. ■

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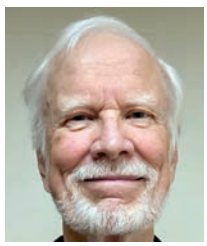

James E. Alcock is professor emeritus of psychology at York University, Toronto, Canada. He is author of ***Belief: What It Means to Believe and Why Our Convictions Are So Compelling***, ***Parapsychology: Science or Magic?***, and ***Science and Supernature***. He is coeditor of ***Psi Wars: Getting to Grips with the Paranormal.*** He is a member of the Committee for Skeptical Inquiry's Executive Council and of the Skeptical Inquirer editorial board.

Blind Victoria's Secret

You already know about the famous takedown of the so-called faith healer Peter Popoff. Now it's time to learn the story of another deceptive faith healer—W.V. Grant—who was exposed by the first local group inspired by CSICOP's early work.

EUGENIE C. SCOTT

I had missed my chance in San Francisco.

It was May 20, 1987, and the Bay Area Skeptics (BAS) had already infiltrated a revival of faith healer W.V. Grant in San Francisco two nights before—without me. BAS was the first local interest group inspired by the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP).

A year earlier, BAS and CSICOP had helped James Randi get the goods on another faith healer, Peter Popoff, who seemed to know an uncanny amount about people's illnesses. Randi revealed on Johnny Carson's popular late-night television program how Popoff's wife broadcast previously collected information to a receiver in Popoff's ear. Popoff declared bankruptcy within a year (Dart 1987).

Unlike Popoff, Grant used no electronic devices. Rather, he was a master of memory: he worked the crowd before the meeting to obtain information on the ailing, using mnemonics to associate people and their details for rapid retrieval later. Grant also was careful about what he said, giving Jesus credit for any healing, not himself.

Even though I had missed Grant's San Francisco revival, he was coming across the Bay to Oakland. BAS member Don Henvick called on me to help, and how could I refuse?

At the time, Henvick must have been the healthiest person on the planet: four different faith healers had "cured" him of seven separate diseases under six different names. Clad in a wig and dress, he had even been cured of uterine cancer by Popoff.

Henvick had also been cured by W.V. Grant—twice—so new faces were needed. Would I help? Oh yes. Faith healers prey on the sick, the desperate, and the vulnerable. They hurt people. If I could do something to publicize Grant's chicanery, I would.

We arranged that I would meet BAS member John Taube at the Oakland Convention Center, where Grant would be holding forth that evening. We knew that Grant especially relished the chance to "heal" the blind, so we decided that I would attend the revival as John's niece, Victoria.

I needed to prepare to pass myself off as a person with a visual impairment seeking faith healing, so I carefully watched videotapes of revivals and their participants. How do they dress? How does the blind (or limited-vision) person behave? How do they walk? How do they listen? How can I pass myself off as a blind true believer? None of the people I saw on TV were wearing "dress for success" academic style tweed jackets. No then-stylish shoulder pads, either—in fact, nothing very stylish. I chose a solidly middle-class two-piece dress with a full skirt. The pattern was splashes of yellow on a black background: bright but not flashy. I needed to catch Grant's eye in the crowd. I wore my prescription sunglasses to suggest my visual impairment.

I headed for the rapid transit train to Oakland (Victoria wouldn't drive a car, obviously). A stop away from my exit in Oakland, I put on my prescription sunglasses, wishing for the only time in my life that they were thicker. I cautiously walked up to street level and headed down the street toward the convention hall. I wanted to stay in character from the moment that I might be observed by any of the Grant staffers.

When I came to a corner, I stepped off the curb, listened, and looked in both directions before crossing—even though there was no traffic at the time. Victoria would not take chances. And Grant's people might be loitering around the auditorium. We knew after the Popoff exposure on Johnny Carson's show in February 1986 that faith healers were on the watch for skeptics.

Outside the hall, a slightly built senior citizen with a cane watched me intently as I carefully stepped across the street.

"Victoria?"

"Uncle John?"

It was the first time we had met.

"I've already talked to him," whispered John Taube conspiratorially. "I told them I felt great since he healed my arthritis last week, and he said that it wasn't him that healed me, but Jesus Christ." Poor Jesus! Omniscience hadn't told Him that He had healed the healthy. Taube might have been a skinny guy in his mid-seventies, but he was in better shape than a lot of fifty-year-olds. And he definitely didn't use a cane or suffer from arthritis.

Taube continued, "Then I said, 'I am bringing my niece Victoria for you to pray over. She's blind.'"

"What did he say?"

Taube then shared that Grant responded with this question: "Is she *completely* blind?'"

We looked at each other. Was it going to be as easy as this? Had we given him the right bait? It sounded like it. Is she *completely* blind? That's what he would be looking for, or rather, looking to avoid. No one with a white cane is ever called to be healed, just like no one who comes to the revival

W.V. Grant "healing" the author in 1987

in their own wheelchair is ever called.

Grant has a great "heal the blind" shtick. Grant identifies the person to be healed to the audience as blind. Then he plants himself squarely in front of them, conducts his healing routine, and orders the newly sighted individual to "grab my nose"! The ex-blind person does so, and the crowd loves it. Cheers commence. Given the position of the nose and the relative sizes of the mid-face and a person's hands, anyone not stone blind is going to get fairly close even on a random grope. The crowd is impressed, and no one compares the degree of sight the person had before and after the healing. But for the shtick to work, the person to be healed has to be able to see *something*, even if only shapes or blurs.

I took Taube's arm, and we walked into the Oakland Convention Center's largest ballroom. Standing in front of the auditorium was Grant, amid a cluster of admirers. I noticed some large men in suits standing watchfully on the periphery. Taube enthusiastically pushed me forward.

"This is my niece Victoria, the one I told you about."

I extended my hand to shake Grant's, remembering to extend it slightly off center, so that he would know that I could see where he was, but not in great detail.

"What's your name, sister?"

"Victoria," I said, smiling widely.

"Sister, I'm going to lay hands on you tonight," he said firmly, nodding his head with great certainty. Wonderful how God lets him know even ahead of time. I beamed, of course, and then Taube and I turned away to get a good seat.

As we entered the auditorium, Taube remarked to me *sotto voce*, "Now comes the boring part. We just have to sit, and, oh my, is it awful!" I poked him quiet as a burly man made his way up the aisle toward us: a really big, well-dressed man who looked us over appraisingly. I beamed at him somewhat myopically behind my dark glasses, thinking, *Is this where our cover is going to be blown? Am I seeing too well? Do they suspect a plant?* He stopped to greet us, introducing himself as Reverend Cope, Reverend Grant's assistant. Maybe he wasn't checking us to see if we were infiltrators. More probably he was making a positive identification for later use. Apparently, we had "pigeon" written all over us. We continued to the front of the auditorium, following Henvick's instructions to sit in the first row on the right in the aisle seats.

After a revival is scheduled, Grant mails letters with flyers to his supporters in the region, inviting them to bring a "special offering envelope" with $20 inside. In this envelope is a card on which the supporter writes their name and address and whatever ailments or personal problems they want Grant to pray for. Before the service begins, Grant invites all those with "special offering envelopes" to come up—one at a time—and hand the envelopes to him. This way he can get a good look at them, make an association with their name, and then look up the ailment backstage before the service. And the Oakland revival was true to form. Uncle John and I awaited our big moment.

Uncle John and Victoria—John Taube and I—sat there in the front row, whiling away the time while Grant's staff checked the speaker system, ensured that the organ worked, organized the brochures, and attended to other such details.

Soon a fellow began playing the organ, and more and more people drifted in. Grant made his first pitch of the night for the "special offering envelopes."

As usual, Grant instructed the audience not to talk to him while he dealt with the envelopes—possibly because he did not want to be distracted while forming his mnemonic associations. Not everyone who came up was going to be called out; however, you could be sure that several individuals who truly had serious ailments would be ignored.

I recall a man dressed in a shabby suit—but a suit that he had obviously put on especially for the occasion—who had some sort of paralysis or spasms, which made him walk in a jerky fashion, lurching without full control of all his limbs. Grant completely ignored him, although the poor man lingered a moment in hopes of some sign of encouragement.

Anyone arriving in a wheelchair obviously needed one, and those were not the people whom Grant would "heal." A typical revival trick is to delight the audience with at least one wheelchair-bound person standing up and walking about. But those chosen to be healed don't usually use wheelchairs; the wheelchairs they triumphantly discard are provided by the healer's staff. If you're bringing your own wheelchair, you can forget about being selected for healing.

As the lines of supplicants began to dwindle, I heard Grant remark to one of the burly, well-dressed men, "I think we have some [inaudible] in the audience. That guy back there, he's been here every night." I couldn't tell what guy was under suspicion.

"Go up and talk to him," Grant ordered. "See what church he belongs to. I don't know, he just stands there smiling. He might be okay."

Don Henvick, the star of Randi's Popoff stings and the organizer of our BAS campaign against Grant, tends to smile beatifically while in character at revivals. Was he the target? Oh Don, where are you? I started looking around as casually as I could for the exits in case we had to make a quick escape. And I hoped that Henvick could think of the name of a church really fast.

Eventually the service began, and there were many more opportunities presented for people to make donations. Then the much anticipated healing part of the service began, and Grant began to work the crowd.

"Some say I tell people not to go to their doctors, but I don't. Go to the doctor you are closest to. If you're closer to Dr. Stein or Dr. Brown, go see them. If you're closer to Dr. Jesus, go see him!"

It was a classic Grant service: people raised from wheelchairs, canes flung across the stage, legs were restored to equal length, people were cured of diabetes, blood disease, and heart trouble, and—at last—the healing of the blind. Grant came over to where Taube and I were sitting, took my hand, and raised me to a standing position. My heart was hammering. *Had Henvick been recognized in the back of the room? Have they seen a sting coming? Was I about to be called out as a "secular humanist"—or worse? Where are the burly goons?*

But following Henvick's instructions, I beamed at Grant as he took off my prescription sunglasses.

"How many think God can heal this blind sister? Everybody say, 'Praise the Lord!'"

"Have you told me your name?" Grant continued. "Have you told me your needs? Have you told me anything about yourself?"

Well yeah, buddy, I told you all of that stuff, but I'm sure as heck not going to say that with 300 people looking at me and your goons right around the corner. Besides, at this point I was really, really nervous because I had no idea where Henvick was. After everything was over, Uncle John praised my acting ability. I owe it all to overactive lacrimal ducts.

"Your doctors have done about all they could do," Grant confidently told me. "In fact, God says the next time you see Dr. Rice, not only are you going to see Dr. Rice for the last time, but God says he's got to be astonished that you're even there—who's your doctor?"

"Dr. Rice," I blubbered, tears streaming down my face. I was still nervous about the burly men in suits. We went on like this for a while and then came the dramatic part. As usual, he asked me to reach out and grab his nose and then his ear, which would have been pretty easy even if Victoria really had been blind.

"In the name of Jesus. It's not God's will for her to have a white cane [what white cane?] and walk around with dark glasses. Everybody wave at her. Victoria, if you see them, wave back."

Boy, did I wave. They didn't know that Victoria was a secular humanist scam artist fake. The goons were nowhere in sight. We got away with it.

"Everybody give Jesus a big hand. Hallelujah!"

Grant let me sit down. I fell into my seat, completely worn out from my dramatics. Now that my glasses were off, I couldn't see much anyway. (A staff member eventually returned them to me.) Two years before, I had been in traction for a slipped lumbar vertebra; why hadn't Jesus noticed my bad back?

Taube discovered that in all the excitement, he hadn't remembered to turn on his tape recorder. Fortunately, Don Henvick had turned on *his* tape recorder strapped to his leg. When I was called out, Henvick had leaped to his feet from midway back in the auditorium, snapping photos. Some of the well-dressed burly men started moving toward him, but he was in the middle of the row, so he was pretty much unreachable. Most importantly, he was sitting next to a reporter from the *Oakland Tribune*, explaining techniques such as "evening out" leg lengths, ignoring people who came in wheelchairs, "curing" invisible illnesses such as diabetes and heart disease, and so on.

The climax of Grant's Oakland campaign was expected to be the following evening. But the next morning the *Oakland Tribune* had a half-page, six-column spread on Grant, his supposed ability to talk to God, and the amount of money he shamelessly collected from vulnerable people. It highlighted the healing of "blind Victoria" and revealed how rather than learning about Victoria from God, he had talked to her before

the service. It was a powerful piece of journalism—and BAS amplified its effectiveness: we made fliers out of the article and left them outside of the auditorium that Friday evening. Friday night was far from being the highpoint of the Oakland campaign: Grant spoke to fewer than fifty people.

In hindsight, I wish we could have done more to publicize Grant's misdeeds. What if we had been able to get that *Tribune* article to skeptics in the next community in which Grant was to speak, and if they could have given fliers to future audiences? But BAS was founded in 1982, and even in 1987, there wasn't yet a network of local skeptical groups around the country. It wasn't even that easy to know the schedule of revivals for Grant and other faith healers: this was pre-internet; communication was by mail or telephone or—if you could afford the state-of-the-art technology—fax. So, we did what we could for the times.

But the internet provides communications opportunities we lacked in 1987. An audience of over 300 people saw me "healed" of blindness, and doubtless my actions reinforced many people's belief in Grant's miraculous abilities. That still gives me qualms. The only way to assuage that ethical issue is to reveal the truth of what goes on in these revivals to as many people as possible. Susan Gerbic and her teams have engaged in several stings of psychic mediums who claim to communicate with the dead, "grief vampires" in her pithy parlance. The skeptic community can amplify her exposés in ways we weren't able to do in the late 1980s. Our movement has a long and storied history, but our work is far from done.

Faith healers, grief vampires, and scammers of all stripes are rubber ducks; after getting pushed down, they keep bobbing to the surface. After being convicted of tax evasion and serving sixteen months in jail in 1996, Grant, at eighty, is still "ministering" and healing at his Dallas Eagle's Nest Cathedral despite our and others' efforts to expose him. We'd prefer if Grant and all the other exposed exploiters of the vulnerable were shamed out of business, but we can't let the perfect be the enemy of the good. Skeptics can still help the public by relentlessly exposing these predators and warning at least some of the public. Sharing information and working together on common problems must continue and even increase during our next fifty years of promoting scientific skepticism. ■

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Eugenie Scott, a physical anthropologist, is founding executive director of the National Center for Science Education. She is a fellow and member of the Executive Council of the Committee for Skeptical Inquiry.

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My Memories of The Amazing Randi: Part One

BANACHEK

Editor's note: This is the first installment of a two-part article. The second installment will appear in the May/June 2026 issue of Skeptical Inquirer. Banachek originally wrote this tribute to James "The Amazing" Randi for The International Brotherhood of Magicians. We are thankful that he let us publish it here as well.

It was July 11, 1974, and I was fourteen years old. My two younger siblings and I had been abandoned by our mother in Port Elizabeth, South Africa. At 7:30 p.m. we were sitting by the radio in rapt anticipation. We were listening to *Deadline Thursday Night*. The show was broadcast on Cape Town's Springbok Radio, which, although now gone, was South Africa's first commercial radio station.

I was excited as I waited to hear the man the whole world had been talking about—the man with superhuman powers. Every adult I knew claimed this man could bend metal objects, start broken watches, and break and bend rings—using just the power of his mind. On this night, he was going to teach people how to do this in their own homes.

Adrian Steed, the producer of *Deadline*, handed this incredible person a key. Within thirty seconds, Steed excitedly exclaimed, "It is bending!" In my mind, I could see the key bending.

Steed then handed this superhuman a handful of broken watches, and soon, some of them started to work again. Next came the big moment—the superhuman told the listeners how they could do what he did. "You must want it to happen," he said. "Just take the knife or the fork, stroke it gently, and will it to bend." He said that any metal object would do. I hastily went around my home looking for a metal object that would be easy to bend if I had "the power." I took a needle from the sewing kit that my mom had left behind.

I concentrated on the needle as this man instructed. I believed it was going to bend. Why would I not want to possess such a special ability? We were poor, and I was raising my siblings alone. It did not hurt that I wanted to convince my younger siblings I had that power. The more I stared and believed, the more I was convinced that I had succeeded and that my needle had bent. It was barely perceptible, but it had bent. At least I believed it had! Skip forward two years.

A Life-Changing Book Is Found

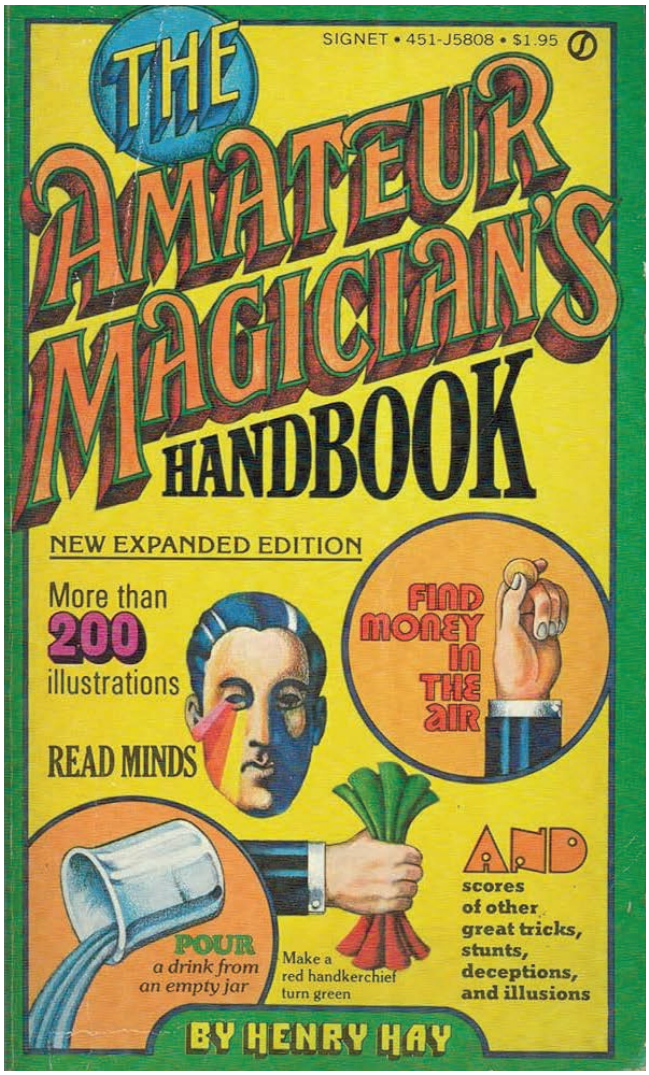
I left South Africa and spent almost two years in Australia. In 1976, I moved to the United States. I picked up a book called

Banachek (left), Michael Edwards (center), and James Randi (right) in 1983

The Amateur Magician's Handbook by Henry Hay and spent many fascinated hours in my room in Philadelphia, trying to cleanly restore a ripped and torn cigarette. I had not yet come to the realization that there was a subset of magic called mentalism. I was also not aware that there were some magicians/mentalists who were willing to con people into believing they possessed psychic powers.

In the spring of 1976, we moved to Aurora, Colorado. In a second-hand bookstore, I picked up a book that was about to rock my world and give me a lifetime career. It was written by the magician and escape artist, James "The Amazing" Randi. The man who had convinced me that I could bend metal was on the cover. His name was Uri Geller, and the book was titled *The Magic of Uri Geller*. In 1985, the title was changed to *The Truth about Uri Geller*.

The book's dedication stunned me, "Dedicated to Uri Geller and Shipi Shtrang, two men who fooled the world—almost." The truth, as Randi put it, was that Uri Geller was nothing more than a magician. Uri Geller claimed that, under scientific observation, he convinced scientists at Stanford Research Institute that he had real powers. Additionally, he claimed that the study had been commissioned by the United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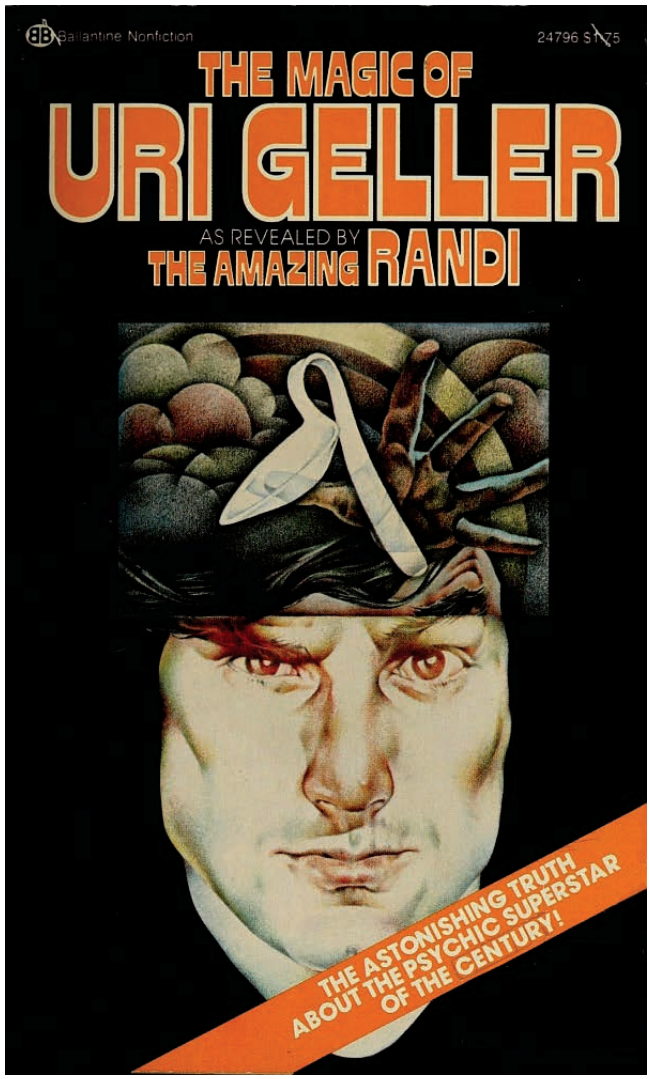
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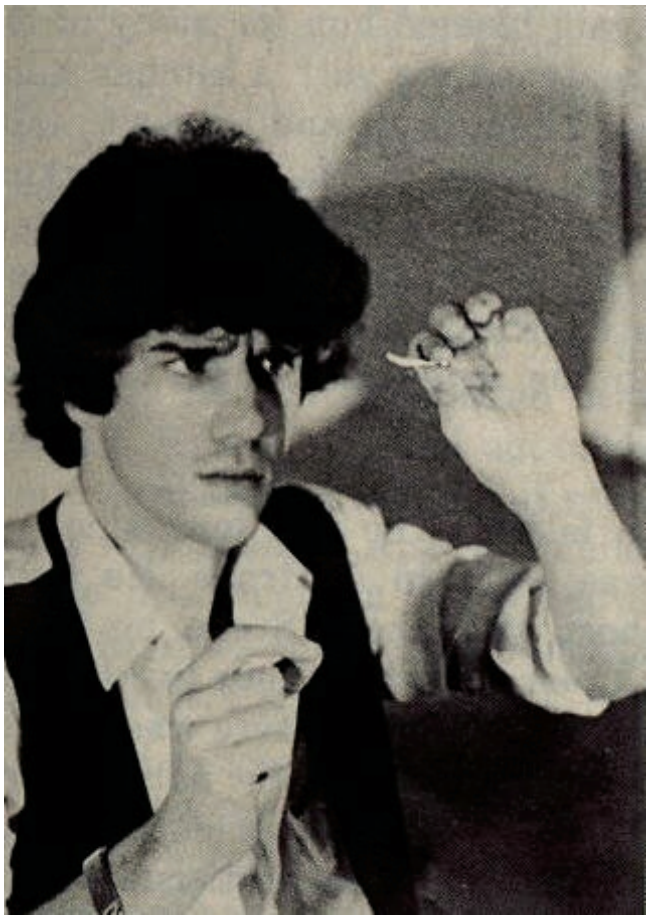
States Defense Intelligence Agency. The latter was true, but in his book, Randi explained that the researchers were already believers and the tests were sloppy, to say the least. He showed in convincing detail how each experiment could have been performed via trickery.

Russell Targ and Harold Puthoff, the scientists in charge, documented their own beliefs and did not put proper protocol in place. Their biases were their downfall. The book described methods of bending keys and nails and included photographic evidence of deception.

I was shocked. I had learned a valuable lesson from Randi. As a kid, everyone I knew believed in Geller, so naturally, I did, too. Randi taught me that, just because people seem authoritative in a subject, did not mean that they were educated in what they believed. Many people simply follow the masses. In that one instance, he had shown me how important it was to think critically. Randi said that Geller tricked even reputable scientists with tricks that were the kind that used to be on the back of cereal boxes when he was a kid. "Apparently, scientists don't eat cornflakes anymore," he said. In 1991, Geller filed a fifteen-million-dollar lawsuit against Randi and the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP), claiming that sentence was slander. The court finally dismissed the case, and Geller eventually settled the case at a cost of $120,000.

In 1992, less than a year later, Geller sued Randi again for saying in his book, "He began his career as a stage magician in Israel, where he was once arrested for claiming his feats were achieved by psychic power." Geller had not been arrested but had been sued. The publisher issued an erratum that changed the phrase, "He was once arrested" to "He was once sued." In 1993, Randi commented, "I made an unintended factual error in misinterpreting the words 'brought to court' and 'guilty' as 'arrested.' This was done without malice or reckless disregard for the truth." Geller also lost this case and had to pay Randi's legal fees.

Both cases were time-consuming, and they cost Randi so much more to defend himself than he was awarded. It has been said that Geller had financial support from others in his lawsuits, so Geller lost nothing personally. It is quite understandable that when, years later, Geller tried to shake hands with Randi, Randi refused. It had become very personal.



Banachek in 1980

MacArthur Fellows Award and Benefactors

Due to the lawsuits, if Randi had not been awarded $270,000 via the Macarthur Fellows Award in 1986 at the age of fifty-seven, he may not have been able to continue his crusade against all things woo-woo. This award allowed him to buy a house in Florida, set up offices, and officially become the number-one skeptic in the world.

He had proven his worth by using his knowledge of the scientific method and his understanding of the techniques of conjuring to debunk paranormal claims. Through his exposés, he alerted the public to the danger of treatment from psychic surgeons, faith healers, and quacks. Randi authored *Flim-Flam! The Truth about Unicorns, Parapsychology, and Other Delusions* (1980), *Testing Yourself for ESP* (1981), *The Truth about Uri Geller* (1982), *The Faith Healers* (1988), *The Mask of Nostradamus* (1990), and *The Encyclopedia of Claims, Frauds, and Hoaxes of the Occult and Supernatural* (1995). He also coauthored *Houdini: His Life and Art* (1978).

I digress. At that point, I had only heard Geller on the radio. It was said that you could visually see the items bend. It was not until years later that I realized that, when Geller bent something, it was usually hidden from view unless he was breaking it, which was different. With the knowledge I gained from Randi's amazing book, I challenged myself to create my own bends, visual bends that were superior to anything else that was being done at that time.

High School Years

We moved to Washington, Pennsylvania, and it was there, while I was in high school, that I honed my skills. Students stole the silverware from the cafeteria for me to bend and destroy. I got in trouble for that, and they went to plasticware until I graduated. I also figured out how to short circuit the wires in the school bell so it would go off before the end of the school day, and we would get out early. Each day, I claimed that I was going to do it with my "psychic powers." I finally got in trouble for that, too.

Due to my lack of parental upbringing, I was socially inept. I was the kid that sat at the back and wore a heavy coat all year long. I was ashamed of my skinny body and afraid that the teacher would call on me at any moment. In high school, I had three jobs and worked as a fry cook, a security guard, and a hospital worker.

Randi's book opened me up. I had never had a home before, but I found one performing. My home was the stage, whether it was a cafeteria, living room, street corner, classroom, or real stage. Randi gave that to me, along with a career. I found out later that he has done so for many throughout the years. Penn and Teller would not be P&T if it had not been for Randi saying they should do a show together. Criss Angel would not have that name if it had not been for Randi suggesting it to him. I once heard a reporter ask Randi when he would realize that he had made it. His answer strikes home even today. He said, "When people tell me they got their happiness and career because of something I did." He has done that so many times. I frequently hear how Randi helped people get their start. But again, I digress.

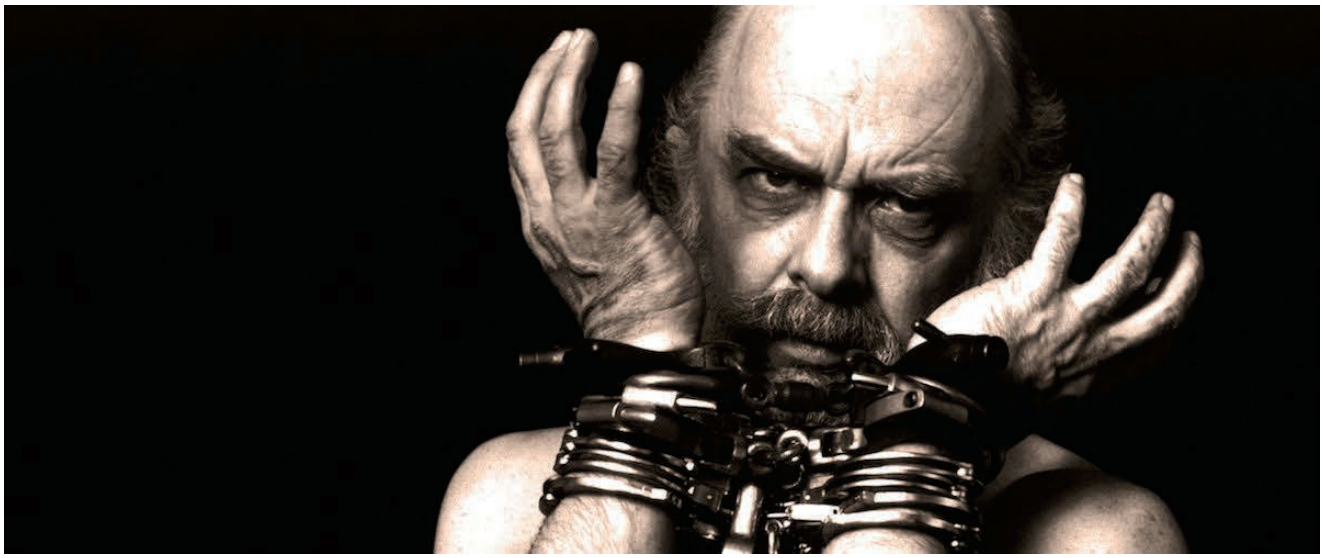
Early Randi

I read everything I could about Randi, and here is what I came to know. I knew he was born in Toronto, Canada. I knew he had almost died many times. I knew that, when he was a kid, he had a bicycle accident and was in a body cast for thirteen months. The doctors thought he would never walk again. During that time, he read books about magic after seeing Harry Blackstone Sr., and that was what started him on his magic quest.

I knew that he quit high school at the age of seventeen to join the circus. I knew that, for a while, Randi had written an astrology column in which he had posed as a psychic. His columns were put together from other astrology columns, and he claimed the information was his own.

I knew that, as a teenager, he had exposed a preacher by duplicating a trick that the minister used to con his congregation. The pastor's wife called the police, and Randi ended up in jail.

I knew that he had been a famous escape artist. William Lindsay Gresham dedicated his book, *Houdini*, "To the greatest living escape artist, 'The Amazing Randi' (Mr. James Randall Zwinge), this book is dedicated with the sincere admiration of the author."



I knew that Randi had broken Houdini's ninety-three-minute record of staying underwater in a glass coffin. Randi stayed under for 104 minutes and graciously pointed out that he was much younger than Houdini when he performed the stunt. Randi later repeated the stunt and stayed under for two hours and two minutes. He was also frozen in a block of ice for forty-four minutes.

I knew that Randi had fought segregation in his early performing days and refused to perform in theaters where Black people were not allowed to attend or perform.

I knew he had been good friends with Joseph Dunninger, who was the most famous mentalist ever. Dunninger also exposed mediums and con men, much like Houdini and Randi. Dunninger offered $31,000 to any medium who could make a pencil that was hung from a pendulum write out a word on a card beneath it.

I knew that Randi traveled with the rock star, Alice Cooper, and created all the illusions in his show. Randi even played the role of a psychotic dentist in Alice's show.

I knew he exposed Geller because Randi himself had once been accused of having psychic powers. It scared him that psychics took advantage of people who believed those powers were real.

I knew that Randi made a standing offer of $10,000 to anyone who could produce a paranormal phenomenon under Randi's control. In 1964, the offer had been a thousand dollars, given on a radio broadcast after Randi had been told to put his money where his mouth was. Later, Lexington broadcasting added $90,000, and Randi's challenge became "The $100,000 Challenge." Rules and regulations were put in place to make sure that it was fair for the challenger and the challenge itself. The testing was to be scientific and agreed upon by both parties. Later, it became "The One Million Dollar Challenge."

But again, I digress. I've gotten ahead of the story.

I saw that Randi went on every TV program he could to duplicate Geller's and other psychics' feats. Randi was the spearhead for the skeptic movement, getting coverage to help aid critical thinking. Many hated him for it, but due to my past experience, I knew he was doing the right thing with his efforts. I knew that Randi was one of the founders of CSICOP (Committee for the Scientific Investigation of Claims of the Paranormal).

Randi and Banachek Meet

I devised a plan. If anyone could ever make this plan come to fruition, it would be Randi. However, I needed him to be on board with it. Maybe it was my naivety or overconfidence because I had just convinced a policeman that I could bend a key by bending his patrol car key, but I decided to write Randi a letter. I did not really expect him to respond, but he did. At the time, I didn't know that Randi consistently got back to his fans to send autographed pictures or give words of advice or a thank you. Over the years, I learned how anonymously altruistic Randi was.

Apparently, my letter was different than others he received. I brazenly told him that, if he ever needed a kid to fool scientists and make them believe that psychic powers were real only later to reveal that it was all a hoax, I would be happy to do it. I told him about my experiences and what I could do. Randi wrote back and said that, if I came to the New Jersey/New York area, I should visit and could stay at his house. I made it my mission to do just that.

A Wizard's Domain

The day came when I took a Greyhound bus to New Jersey from Washington, Pennsylvania. Randi met me as promised and took me to his home in Rumson, New Jersey. It was just like you would expect a magician's home to be: The front door had a secret lock and a secret way to open it. The front door opened from the side opposite from what you would expect. The doorbell resulted in a loud gong, followed by a recording of the voice of *The Shadow*, a popular radio show at that time. Inside were two huge South American macaws, doves, a cat, mummy cases, a clock that ran backwards, a huge bookcase that was a secret door, Peruvian artifacts, masks, and many

other wonders. This was a true wizard's house.

I told Randi about my hypothesis that scientists had lamented for years that there was no evidence of psychic powers due to lack of funding, but not because of a lack of evidence. It was my contention that it had nothing to do with funding. Rather, it was their biases that got in the way. Instead of using real scientific methods to test psychics, they tended to document what they believed to convince others, much like Targ and Puthoff had done. The psychics were in charge of the testing instead of having the scientists in charge, the way it should have been.

I had also concluded that many of the people doing the testing believed they were too smart to be fooled. Often, smart people are the easiest to be fooled as they need an explanation. If they do not know how something is done and if your explanation sounds plausible, they will accept that.

Military Action

During the 1970s and 1980s, psychic powers were all the rage and, as a result, believable. Much like politics today, the media was spoon-feeding psychic propaganda from behind the Iron Curtain and other places, as if it were real. The result was a nation of believers.

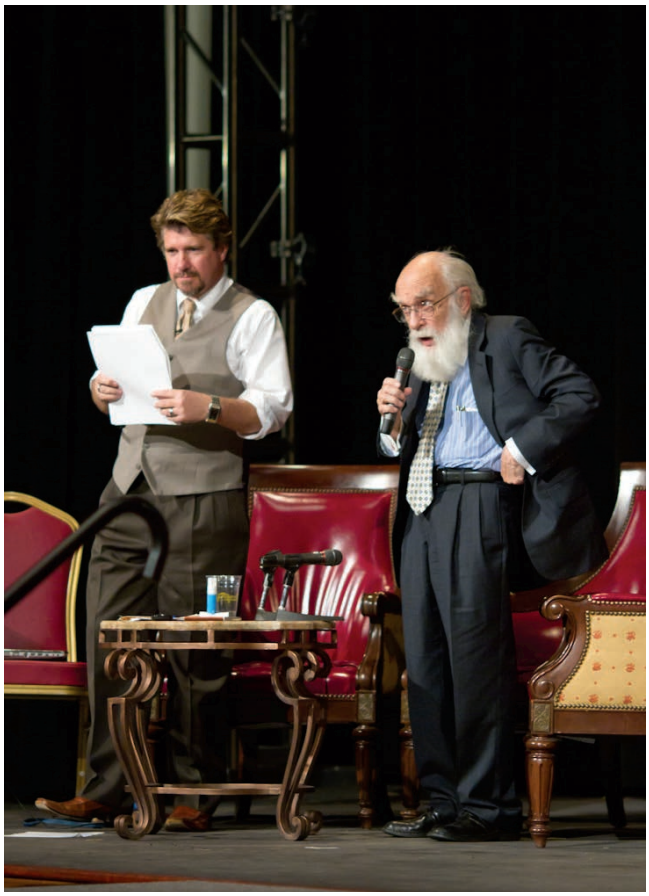
In 1978, the U.S. government got in on the action when it invested twenty million dollars on a project known by many names. In 1991, it was finally titled the "Stargate Project." The twenty-million-dollar investment the government made was spent in just the first year.

This was not the first time the U.S. military looked seriously into psychic phenomena. In 1952 at Duke University, the U.S. Army ran a study to find out if dogs were psychic. For a while, they concluded they may be. There were very few Amazing Randis around back then.

Randi agreed with me, but he never once asked to see a single trick. He did not show me a single trick, either. That is not quite true. He did show me a version of the prediction trick, Clippo and the Vanishing Leprechaun, but he did not teach me anything. I was disappointed, but I found out years later that he was more interested in my character and how I handled myself. He wanted to tell the media that I was a self-taught kid so they could imagine what I could have done if he had trained me. This, of course, was only if the opportunity to infiltrate a parapsychology lab ever arose. Randi was always one step ahead.

Oh, wait, Randi did teach me something else. I hated the taste of yogurt. I thought it tasted sour. He told me that I had to mix the yogurt as all the tasty stuff was sitting at the bottom. I did as he said, and the yogurt that I previously hated tasted like delicious blueberries. It was magic.

I think back now and realize that Randi probably did not fully understand my ability to create on the fly and outside the box. That was a good thing because, if he had trained me, my demonstrations would have made me look more like a magician than a true psychic. Randi told me to continue to act like I was real and not tell anyone that I was using tricks. I was to keep up the facade. It felt wrong, but I understood the reason. If the opportunity ever came up, they, whoever "they" were, could do a background check on me, and there would be no evidence of me claiming to be anything other than psychic.



Banachek and Randi discussing Project Alpha at TAM in 2009

I went back to Pennsylvania and ended up living with another family. After a few months, that family kicked me out because they found a letter from Randi in my room and my secret of not being a "real" psychic was revealed. In the letter, Randi had stated that I had to keep this secret from them, too. Who could blame them?

I was back on my own while still in high school and holding down three jobs to survive.

Project Alpha

At one of my jobs as housekeeper at Washington Hospital, a girl I dated by the name of Tammy brought me a newspaper with an Associated Press article. A physics professor, Peter Phillips at Washington University in St. Louis, had been granted a half million dollars to study psychic phenomena. The grant was offered by James S. McDonnell, the chairman of McDonnell Aircraft, best known for its fighter jets and manned spacecraft, including the Mercury and Gemini capsules. Phillips' chosen area was psychokinesis, the ability to move or distort objects, although at the time, it was known primarily to be the ability to bend objects with your mind. Specifically, he was looking for kids. Well, that was right down my alley and exactly what I had been seeking. I wrote him a

letter, again not thinking I would hear back, but I did, and they wanted to fly me in as soon as possible.

About a week later, Randi called to tell me about a man who had been given a grant at Washington University. I stopped him and asked, "Think of the man's name. Does the letter P mean anything?" He immediately asked me if I knew, and I told him yes and that I had been accepted. He proceeded to tell me about another kid by the name of Michael Edwards who had called him. Mike had also been accepted. He was the one who dubbed our experiment of fooling the scientists Project Alpha.

Project Alpha has been written up extensively, and the facts of it can be found online. I will not go into all the details of breaking into the lab at night, the methods we used to fool the scientists, the BBC reporter who had a complete mental breakdown, the Uri Geller convention fiasco, and more. You can find that easily online or on my podcast, *Banachek's Brain*. It was also featured in season 3 of Brian Brushwood's podcast, *The World's Greatest Con*.

Strict Rules

Randi went out of his way to make sure we had strict rules. If we were asked if we were magicians, we said yes. If they asked if we were working with Randi, we said yes. Also, Randi gave them every opportunity to catch us. He sent them eleven caveats on how to test us. He advised them not to allow more than one subject to work at a time as that would make it easier to be misdirected. He told them to mark everything on a micro and macro level and not to let subjects work with more than one object at a time. He also told them not to let the subject control the experiments or to make changes to protocol in the middle of an experiment. The list went on. They were logical suggestions, but logic does not always enter when it comes to these types of emotional beliefs. They showed us the list up front, laughed heartily, and threw the assistive notes in the trash. Randi even offered to come out and look at the experiments or send someone else in. They bluntly refused.

Randi even sent out rumors that we were working with him. At the same time, he started rumors that the scientists were working with us and Randi to try and fool the rest of the community. The scientists revealed both rumors to Mike and me and laughed about them. Meanwhile, after our big reveal, they had a spokesman use this as evidence that they had asked us if we worked with Randi.

The Big Reveal

For 180 hours, over a period of four years, the scientists touted us as the real thing. Finally, we held a meeting for journalists from all around the world at the Time-Life Building in New York, and every major media outlet attended. As I said before, Randi was a genius at generating publicity. He had Mike and me perform our stunts. It was the first time Randi had seen my bending, including the fork tine bend. He said it was the closest thing to real metal bending he had ever seen.

At the end of the performance, the media was expecting him to say he had found the real thing, but instead, he revealed it as a four-year hoax. One parapsychologist even stated that he felt Randi had paid us off, we were lying for Randi, and we really had psychic powers!

We ended up in every psychology textbook in every university in the United States and many other countries around the world. The study of parapsychology was forever changed. When it was said that we had moved parapsychology backwards and hurt it, Randi pointed out that, instead, we had moved it into the current century. When it was said that it was wrong to fool scientists in the name of science, I stated that it was the scientists who were in the wrong because they had taken money and not used proper science to study the supposed phenomena.

Had they listened to Randi who had consistently given them every tool to detect the trickery from behind the scenes, they would have swiftly exposed us. Whenever we succeeded with an experiment, Randi wrote to them with a possible (the real) solution. They never listened. On top of that, parapsychologists such as Trevor Finch even suggested that, if a magician were introduced into that laboratory, it would have been quickly discovered. He was wrong. Magicians could and did easily fool scientists. ■

Banachek was born in England on November 30, 1960. He was schooled in South Africa and the United States. It was while living in Port Elizabeth, South Africa, that Banachek saw his first magician at a high school function at the age of fourteen. He was intrigued but not enough to delve much further into that secret world. In 1976, the bicentennial year of the United States, Banachek moved to the United States. It was at the end of this same year that he picked up a worn copy of James Randi's book *The Truth about Uri Geller*. Banachek performed Mind Games Live in Las Vegas at the prestigious Strat Hotel, Casino and Skypod.

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What Would the World Look Like without the Modern Skeptical Movement?

RICHARD SAUNDERS

Shall we play a mind game? Albert Einstein called these "thought experiments," and in his case, they helped him imagine revolutionary new concepts in physics. In our case, let's rewind the clock to around 1976—fifty years ago when CSICOP was formed—and imagine a world without the advent of the modern skeptical movement.

No one to challenge the claims of Uri Geller.

No one to investigate the truth behind the UFO phenomenon.

No one to oppose young-earth creationists worming their way into classrooms.

No one to speak out against quackery in all its forms.

[AI]

No trusted voices for the media to turn to when covering hauntings or poltergeist claims.

No one to counter the endless conspiracy theories, from the moon landings to John F. Kennedy's assassination.

The list goes on and on.

What would the world, what would our society, look like in 2026 under those conditions?

It's reasonable to assume that some pseudoscientific claims might have faded over time, but without doubt, many would have been emboldened. In this alternative 2026, most, if not all, public schools might be teaching biblical creationism as part of the core curriculum. Mystic healing clinics could be more widespread than they already are. Government agencies might be spending vast sums of taxpayer money on psychic research programs in a misguided effort to keep ahead of "the other side."

Every huckster, charlatan, con artist, and grifter promoting free energy machines and similar nonsense would have a near-free license to exploit their victims.

And that's just the beginning. This thought experiment can imagine much more.

When we look at our real 2026, we see that science and reason haven't conquered all, far from it. But I like to think what we have is far more preferable than that alternate 2026: the one in which James Randi, Carl Sagan, Paul Kurtz, and others like them sat back and did nothing. ■

Richard Saunders is the chief investigator for Australian Skeptics Inc. and a CSI fellow. He also hosts *The Skeptic Zone* podcast. Photo taken by Susan Gerbic.

Also read "The Day the World Changed . . . for Me", written by Richard Saunders for our 40th anniversary. Scan the QR code and visit skepticalinquirer.org

Get the Most Out of CSICon

Celebrate Our History ... Chart Our Future!

EDITED BY STEPHEN HUPP

Editor's note: Some of the following event descriptions were written by the speakers and staff of the Center for Inquiry.

Whether you've never been to CSICon before or you've attended them all, the 2026 celebration is sure to offer some new fun experiences while also bringing back many of the events that attendees have enjoyed for years. The 2026 CSICon—to be held from June 11–14 in Buffalo, New York—will be a joyous celebration of the fiftieth anniversary of both Skeptical Inquirer magazine and the Committee for Skeptical Inquiry (CSI). This article will help you get everything you can out of this wonderous event. Before diving into the schedule, let's begin with a few basic tips:

1) Arrive on Wednesday, June 10, so that you can hit the ground running on Thursday morning. Depart on Monday (or very late on Sunday), so you can fully enjoy every aspect of the conference.

2) Book your hotel room early. Most attendees will be staying at the Hyatt Regency, making this hotel the place to be. However, rooms will likely sell out. Fortunately, we do have some overflow hotels nearby, but it's generally more fun to stay at the main hotel.

3) Plan your meals in advance with reservations when possible. Compared to conferences held in Las Vegas, there will be fewer restaurants near the Buffalo Convention Center. Finding food at the last minute will be tricky given that hundreds of skeptics will also be seeking food at the same times.

4) Keep in mind which meals you can get at the conference itself. Although you'll be on your own for most meals, the Thursday night reception will have some free appetizers and a cash bar. On Saturday, we have a VIP luncheon, but that will have very limited seating (and it's a fundraiser, so its ticket is

admittedly pricey). Also requiring an extra ticket, Saturday night will include our 50th Anniversary Awards Dinner and Mystifying Variety Show. Please note that on Friday and Sunday, none of the conference events include food. Free coffee will be available in the mornings.

5) Most of the extra tours and workshops have limited tickets available and will probably sell out. As I write this, I'm mindful of the fact that emphasizing *scarcity* is one of the tactics of persuasion, so feel free to apply your critical thinking as you read this tip. That said, many of the events requiring an extra ticket have tended to sell out in years past.

6) Most of the advertised presentations will be included with your general admission ticket. Thus, even if you don't pay for any of the extras, you'll still be able to celebrate with the biggest names in skepticism and science communication, including filmmaker Scott Hamilton Kennedy and several SI columnists, including Andrea Love and Stuart Vyse. Our online columnist Nick Tiller will also be co-presenting with journalist Rina Raphael.

7) To get even more tips about how to get the most out of CSICon, read Susan Gerbic's article "CSICon 101" at skepticalinquirer.org.

Now, let's look at the general schedule for each day. Events requiring an extra ticket will be marked with an asterisk symbol (*).

Thursday (June 11)

The Center for Inquiry History and Mystery Tour (8:00 a.m.–11:30 a.m.)*

Experience the history of organized skepticism during a tour through the headquarters of the Center for Inquiry. CSI Chief Investigator Kenny Biddle will tell tales of the most intriguing curiosities in the building, and CFI Director of Libraries Timothy Binga will guide you through the building while discussing the history and architecture and taking you through an extensive collection of books authored by—and even owned by—the world's greatest mystery solvers, skeptics, and freethinkers. Transportation will be provided.

Investigating Extraordinary Claims Workshop (12:00 p.m.–1:45 p.m.)*

Join veteran investigators Jim Underdown and Benjamin Radford as they share their decades of experience in this split workshop focused on mysteries and superpowers! The world is full of mysteries, and with over half our population still holding onto various paranormal beliefs, we need all the tools we can get to investigate, test, and solve them. When it comes to claims of fearsome monsters, extraterrestrials, and haunted houses, where do you start? Radford, author of *Scientific Paranormal Investigation: How to Solve Unexplained Mysteries* and deputy editor of Skeptical Inquirer magazine, will go over the methods, tips, and tricks he uses to not only investigate paranormal claims but to solve the mysteries. But what about those individuals who claim to have superpowers beyond those of regular people? That's where Underdown shines. He'll go over the processes and detail specific methods he and the CFI Investigations Group (CFIIG) employ when designing properly controlled tests for the CFIIG $500,000 Paranormal Challenge, which happens to be the largest such prize in the world.

Don't Believe Everything You Believe Workshop (2:15 p.m.–4:00 p.m.)*

Think you're immune to bias? That's exactly what a person with biases would think! Join Bertha Vazquez and Melanie Trecek-King for a lively, eye-opening workshop on how tribal thinking hijacks our beliefs. Learn how to argue with yourself more productively and catch your inner caveman in the act. You'll try out critical thinking tools for escaping your echo chamber, practice the fine art of being wrong (gracefully), and even learn how to outsmart your own brain. Vazquez is the director of education for CFI, and Trecek-King is the founder of Thinking Is Power.

Magic for Skeptics Workshop(4:30 p.m.–6:30 p.m.)*

Join Richard Wiseman, Raymond Hall, and Massimo Polidoro as they undertake a three-part journey into the fascinating world of magic and skepticism. In the first part, you will discover the key psychological principles that magicians use to astound their audiences and find out how to perform several mind-blowing miracles. In part two, you will be invited into the mysterious realm of scientific sorcery and learn physics-based stunts that can be used to both educate and entertain. Then, in the third and final part, you will go backstage with the psychics and uncover some of the tricks of the paranormal trade. Together we will take a deep dive into deception, psychology, science, skepticism, and the paranormal. This will be a hands-on and highly interactive session in

which you will discover how to perform amazing card tricks, read minds, predict the future, transform a tea towel into a chicken, and much more.

Opening Reception and Presentation (7:00 p.m.–9:30 p.m.)

The opening reception will include appetizers and a cash bar. Stephen Hupp (CSI's executive director and editor of Skeptical Inquirer), Robyn Blumner (CFI's president and CEO), and Eddie Tabash (chair of CFI's board of directors) will provide opening remarks before a yet-to-be revealed headliner will set the stage for the rest of the conference with an inspiring presentation.

Friday (June 12)

Morning Session and History Panel (8:45 a.m.–12:15 p.m.)

Conference emcee and comedienne Leighann Lord will open the morning session with some humor that will wake everyone up before she begins introducing the morning speakers. The session will culminate in a history panel hosted by Massimo Polidoro that includes James E. Alcock, Eugenie Scott, Barry Karr, and Ruth Frazier.

Afternoon Session and SGU Podcast (2:00 p.m.–5:30 p.m.)

After several riveting afternoon presentations, the cohosts of *The Skeptics' Guide to the Universe* podcast—Steven Novella, Jay Novella, Cara Santa Maria, Bob Novella, and Evan Bernstein—will be joined by Geroge Hrab for a live recording of the show. The *SGU* recently celebrated twenty years of podcasting and were featured on a cover of SI.

Banachek's Telepathy Show (7:45 p.m.–8:45 p.m.)

You may know Banachek from Project Alpha, when he teamed up with Michael Edwards and James Randi to deceive parapsychologists into believing he and Edwards had real paranormal abilities. Or perhaps you know Banachek from CSICon 2024, when he performed his mentalism show called "Mind Games." During the 2026 CSICon, attendees will be amazed by his other show called "Telepathy." Banachek includes audience participation in his shows, so be ready to have your mind read (and blown).

A Skeptical Extravaganza of Special Significance (9:15 p.m.–11:15 p.m.)*

A Skeptical Extravaganza of Special Significance is an interactive stage show from the award-winning *Skeptics' Guide to the Universe* podcast. With musician and fellow podcaster George Hrab as your host, the team uses improv games, illusions, and playful challenges to reveal how easily perception and memory can be fooled. The audience takes part throughout, solving puzzles, joining experiments, and trying to beat the *SGU* at trivia. Expect sharp improv, live music, and counterintuitive tests to see just how easily your brain can fool you.

Saturday (June 13)

Morning Session and International Panel (8:45 a.m.–12:15 p.m.)

SCIENCE! SKEPTICISM! COMEDY! MUSIC!
A SKEPTICAL EXTRAVAGANZA of special SIGNIFICANCE
THE SKEPTICS' GUIDE TO THE UNIVERSE
GEORGE HRAB

Leighann Lord returns for another day of comical introductions. After a few energizing speakers, the session will once again culminate in a panel, but this time the panelists will represent the international community of skeptics. Richard Saunders will host Leo Igwe (from Africa), Alejandro Borgo (from South America), and Amardeo Sarma (from Europe).

VIP Luncheon and Panel (12:15 p.m.–2:00 p.m.)*

Join this VIP luncheon featuring special guests Bill Nye, Michael Mann, and Peter Hotez. After the meal, CFI President and CEO Robyn Blumner will host a once-in-a-lifetime conversation with this panel of award-winning science communicators.

Afternoon Session and Project Alpha Interview (2:00 p.m.–5:00 p.m.)

After a few electrifying afternoon presentations, Brian Brushwood (host of the *World's Greatest Con* podcast) will interview Banachek and Michael Edwards about their experience working with James Randi on Project Alpha.

50th Anniversary Awards Dinner and Mystifying Variety Show (6:00 p.m.–8:00 p.m.)*

Over dinner, drinks, and song, experience a celebration like never before fit for our fiftieth. Find out who will win our most coveted awards and behold the amazing talents of CSICon's spectacular speakers. The evening will be filled with mystifying magic, skeptical comedy, celebratory music, and genuine appreciation for science communication. CFI West Executive Director Jim Underdown will host Leighann Lord, Richard Wiseman, George Hrab, Malorie Mackey, Daniel Reed, Peter Hotez, Michael Mann, and a few other surprise guests. Dress up like it's 1976, 2026, or even 2076!

DRESS TO IMPRESS
LIKE IT'S 1976...OR 2076
Join Jim Underdown, Leighann Lord, Michael Mann, and Peter Hotez on June 13, 2026 for Our Awards Dinner and Mystifying Variety Show!

Fireside Chat with Bill Nye (8:30 p.m.–9:30 p.m.)

Through his show *Bill Nye the Science Guy*, Bill Nye has taught millions of children the value of science and critical thinking. His other shows—including *The Eyes of Nye*, *Bill Nye Saves the World*, and *The End Is Nye*—reached even more generations of emerging critical thinkers. From his books, such as *Everything All at Once*, to his advocacy work, including his role as the CEO of The Planetary Society, Nye's enthusiasm for science always shines brightly. The year 2025 was a big one for Nye: in addition to guest editing a special issue of SI, he also received a star on the Hollywood Walk of Fame and was even awarded the Presidential Medal of Freedom. Experience the passion, beauty, and joy—or PB&J as he calls it—of science with this one-of-a-kind champion of skeptical inquiry. He'll be joined on the stage by SI's editor, Stephen Hupp.

Sunday (June 14)

Morning Session (9:00 a.m.–12:00 p.m.)

CFI Ambassador Susan Gerbic and SI online columnist Rob Palmer open the morning by hosting several presenters who applied to make it to the CSICon stage. Then comedian Justin Robert Young will host a new event called "*Skeptical Inquirer Presents*: The Fast Talkers" in which presenters such as Meagan Ankney (from the *Spooky Science Sisters* podcast), Katie Suleta (from a recent cover of SI), and Dan Wilson (from the *Debunk the Funk* YouTube channel) will zip through lightning fast presentations that will keep you on the edge of your seat!

Movie Screening (9:30 a.m.–11:45 a.m.; held concurrently with the above session)

Experience a special screening of the new documentary *Hea-*

thens joined by the film's creators, David Cowan and Shawn Hardin, who will participate in an enthralling Q&A session after the screening.

Niagara Falls Excursion and Maid of the Mist Boat Ride (1:00 p.m.–5:00 p.m.)*

Experience breathtaking views of Niagara Falls from the deck of the Maid of the Mist as the boat departs from the American side to the "basin of Horseshoe Falls—the dramatic passage leading you through the roiling waterfall whitewater and massive rock formations" (you don't even need a passport). Test your knowledge of science-themed trivia during the thirty-minute bus ride to (or from) the falls with Brian Dunning—host of the *Skeptoid* podcast and leader of the Skeptoid Adventures tours—and some spooky trivia with Kenny Biddle, CSI's chief investigator of paranormal claims. Discover Harry Houdini's connection to Niagara Falls while you explore the roar! Which CSICon speakers will join the journey? There's only one way to find out! ■

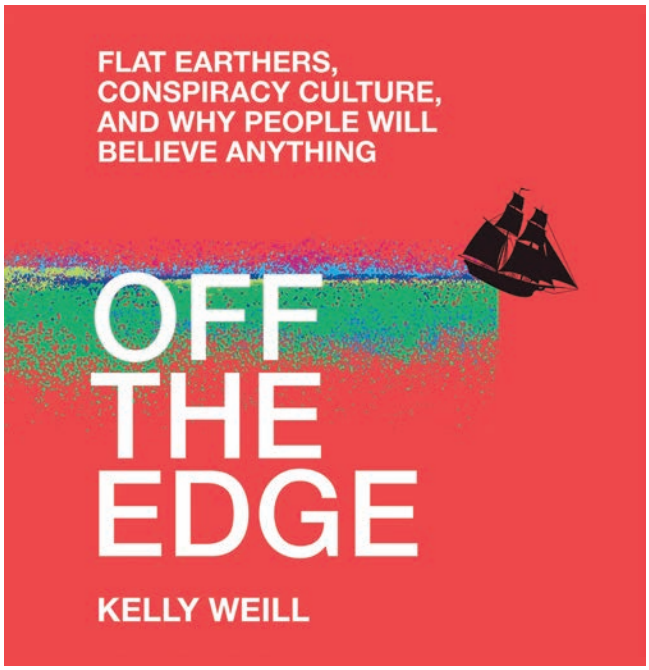
**These events require an extra ticket. All other events are included with general registration. The schedule is subject to change.*

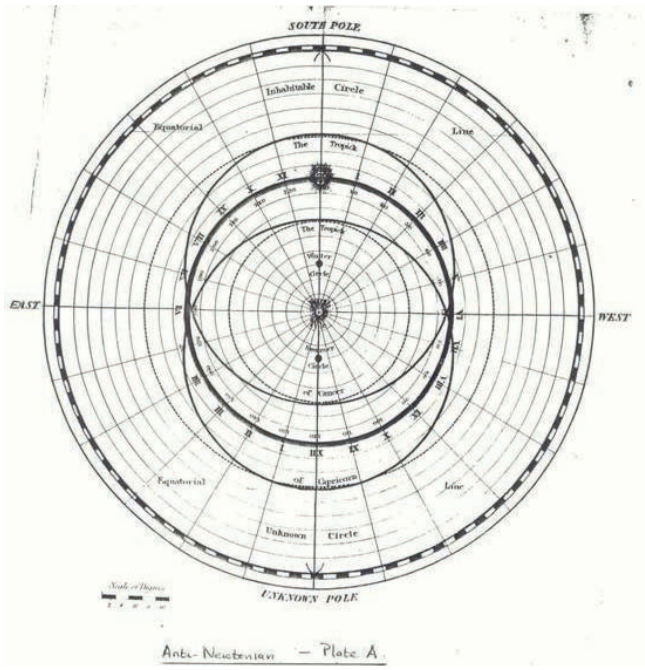
Stephen Hupp is the executive director of CSI and editor of Skeptical Inquirer.

VISIT **CSICONFERENCE.ORG** TO LEARN MORE AND REGISTER. THERE YOU CAN ALSO STAY UPDATED ON THE SCHEDULE AND LIST OF SPEAKERS.

Did *The Anti-Newtonian* Inspire the Flat-Earth Movement?

GLENN BRANCH





When Kelly Weill begins her capsule history of the modern flat-earth movement in the opening chapters of her recent book *Off the Edge* (Weill 2022; reviewed in Branch 2022), she credits Samuel Birley Rowbotham (1816–1884), who wrote under the pseudonym "Parallax," as its prime mover. In doing so, she agrees with the general scholarly consensus: for example, Christine Garwood's definitive history *Flat Earth* credits Rowbotham as responsible for the "modern public revival of the flat-earth idea" (Garwood 2007, 36). But following the late Robert J. Schadewald, Weill also hints at a precursor: "an anonymous author had self-published a short booklet called *The Anti-Newtonian* in 1819 … its specific arguments are so similar to Rowbotham's that he really appears to have taken large parts for his own purposes" (Weill 2022, 18–19, citing Schadewald 2015, ch. 1). Who was the anonymous author of the booklet? Were its arguments similar to Rowbotham's? And did it indeed influence him?

The Flat Earth according to *The Anti-Newtonian*

According to *The Anti-Newtonian*, as Schadewald reports, "the earth is a vast circular plain enclosed by a wall of ice. A map [or, rather, a schematic diagram—see accompanying figure] in the pamphlet shows the north pole at the center, the south pole at 12 o'clock, east and west respectively at 3 o'clock and 9 o'clock, and an 'unknown pole' at 6 o'clock" (Schadewald 2015, ch. 1).[1] The booklet's arguments are turgidly presented and hard to understand. Considering the objection that the mast of a nearing ship is visible before the hull, which suggests that the earth is round, the author offers a single 361-word sentence that wrongly assumes the relevance of telescopes and gratuitously invokes scripture before winding to its end.

The scientific details aside, *The Anti-Newtonian* exhibits three characteristics prevalent throughout the flat-earth movement in general. First, it affirms the priority of do-it-yourself observation and experiment, repeatedly appealing to common experience to support its claims. Second, and correlatively, it deprecates theory—especially the physics of Isaac

1. A weird consequence of *The Anti-Newtonian*'s system of directions, which neither the booklet's author nor Schadewald notes, is that space would be four-dimensional because north/south, east/west, up/down, and unknown/anti-unknown would presumably be pairwise orthogonal.

Newton, as the title suggests—as speculative, conjectural, and even absurd. (These attitudes easily deepen into conspiracy thinking, as with later flat-earthers.) Third, it insists that the Bible is inerrant in all it teaches, which includes a flat earth. "I have … pointed out the true system of the universe, according to the word of God, who created all things," the author declares in the booklet's first sentence; later, the episode in Matthew 4, in which the devil takes Jesus to a very high mountain and tries to tempt him by displaying all the kingdoms of the world, is specifically adduced as evidence against the sphericality of the earth.

The Anti-Newtonian and the Board of Longitude

The ornate subtitle of *The Anti-Newtonian* advertises a "Map of Explanation, proving the Sun to be a moveable body … from which the Longitude is to be found, by Dial Shadow, without the least Variation." The booklet thus promises a solution to the longitude problem, which suggests that the author might have not only paid to have the booklet published but also communicated with the Board of Longitude, established by the British government in 1714, which famously offered a prize for a workable way of establishing longitude at sea (Sobel 1995). As it happens, the board's papers are available in digital form from the University of Cambridge Digital Library. There, in a "Correspondence regarding impracticable schemes for establishing longitude" folder, are a series of letters about "a method of finding the Longitude supposing 'the Sun to be the moveable body.'" (The phrase "the Sun to be the moveable body" is especially distinctive.) These letters are signed by a man named James Fosbury.

Fosbury first wrote to the board on April 27, 1819, enclosing a passage about the longitude from a yet-to-be-published booklet; he sent a further passage about magnets on May 6, 1819, and then "my little publication" (not, interestingly, *The Anti-Newtonian*) a few days later. After he received what was presumably a form letter in reply, he gushed, on November 23, 1819, about "having received your polite and so far satisfactory answer" (Fosbury 1819b). His satisfaction with his reception by the board was not to last. After he resumed correspondence with the board in March 1821, sending a "correction" to his previous work, he soon soured. On March 23, 1821, he warned the board that if he didn't receive a "confutation" of his solution, "I shall transmit it unto every other maritime Power." Nevertheless, on May 10, 1823, he requested the consideration of "one of the accompanying Pamphlets" by the board. Then the correspondence (Fosbury 1819b; Fosbury 1819–1823) ends.

Fosbury's Works

So who was James Fosbury? From the address he gave in his correspondence with the board—94 New Bond Street, London—he appears to have been the proprietor of the Blenheim Coffeehouse and Hotel from about 1813 to about 1828. No further information about his life is available, but the Foyle Special Collections Library of King's College London includes a volume containing four booklets bound together as "Fosbury's Works." These, to give short versions of their prolix titles, are *The Anti-Newtonian* (the same booklet discovered by Schadewald), *The Righteousness of God Defended* (1817), *Reflections on the Inconsistency of Speculative Astronomy* (1819), and *Familiar Conversations on the Real Causes of England's Distresses* (1818). Presumably the original owner of the booklets purchased them separately, had them bound together, and chose the title—although *Familiar Conversations*, which addresses topics in economics rather than astronomy, is usually attributed to Henry Hull.

Even without inspecting their texts in detail, however, it is evident that the remaining three booklets are by Fosbury. The passages from his forthcoming booklet that Fosbury sent to the board about longitude and magnets are verbatim transcriptions of passages from *Reflections on the Inconsistency of Speculative Astronomy* (Fosbury 1819c, 58–66, 23–29). Moreover, the author of *The Anti-Newtonian* uses the term *speculative astronomy* twice (Fosbury 1819a, ii and 16) to describe the topic of a former publication of his, which might have been either *Reflections on the Inconsistency of Speculative Astronomy* or the earlier *The Righteousness of God Defended*, the full title of which similarly promises "reflections on the inconsistencies of speculative astronomy." A detailed comparison of the topics, arguments, and styles of the three booklets would be extraordinarily tedious to compile but would amply confirm their shared authorship.

The Question of Influence and the Wall of Ice

Schadewald (2015, ch. 1) writes, "Rowbotham never mentions *The Anti-Newtonian* in any of his writings, but he almost certainly based his own system on it." While the first part of his claim seems to be correct (and Rowbotham appears not to mention either of Fosbury's other booklets either), the second part is open to question. Without developing a complicated methodology to compare Rowbotham's and Fosbury's flat-earth models, it is plausible to regard similarities as evidence for, and dissimilarities as evidence against, the claim that Fosbury influenced Rowbotham—unless those similarities or dissimilarities are independently explainable. Schadewald in effect agrees, because, for example, he acknowledges that Rowbotham's model "discarded" aspects of Fosbury's model (which involved the unknown direction and a corresponding unknown pole) on the grounds that they were, and Rowbotham must have realized it, unworkable.

The problem for the claim that Fosbury influenced Rowbotham, then, is that the bulk of the similarities between the two flat-earth models are explainable in terms of a common source: the Bible. Schadewald himself observed that "flat-earthism in the English-speaking world is and always has been entirely based upon the Bible" (Schadewald 2015, appendix A), and the passages of the Bible that lend themselves to a flat-earth reading would have been equally available to Rowbotham and Fosbury. The exception is the wall of ice at the rim of the flat earth, for which there is no biblical warrant. But a different common source presents itself: the fact that the early explorers of the Southern Ocean—such as

the British national hero Captain James Cook, who circumnavigated Antarctica within the Antarctic Circle in 1773—reported encountering massive amounts of ice in high southern latitudes. A natural conjecture would be that the southernmost reaches of the earth—the rim, if the earth is flat—is dominated by ice.

Fosbury the Obscure

A further obstacle to the idea that Fosbury influenced Rowbotham is his obscurity. On the available evidence, Fosbury was actively espousing the flat-earth theory in London only between 1817 and 1823, while Rowbotham, born in 1816, was a child living outside Manchester, 200 miles to the northwest. In the days before the internet or even interlibrary loan, it is hard to imagine how obscure works such as Fosbury's, privately printed and presumably out of print by the time that Rowbotham learned to read, would have come to his attention in the first place. True, Rowbotham claims to have enjoyed access to "a small scientific library, a large and expensive orrery, and several telescopes" (Schadewald 2015, ch. 1) while residing with his paternal grandfather as a youth, so it is conceivable that the library contained a copy of one of Fosbury's booklets. But in the absence of any direct evidence that Fosbury's work was available to Rowbotham, the possibility is at best remote.

Moreover, unlike Rowbotham, Fosbury tended to hide his flat-earthery under a bushel. Of his booklets, only *The Anti-Newtonian* declares on its title page that it argues for "the impossibility of a globular world," a phrase that appears only in the final clause of the prolix title. Indeed, Fosbury often leans toward agnosticism about the shape of the earth, contending, "And that it is round is beyond a doubt, … but of what other shape or form, it has not as yet ever been in the power of man to discover or describe: for of all the assertions and proofs that have been given, by modern geographers and astronomers, of the Earth's being either of a globular or spherical form, there is not the least certainty to warrant mankind in fact to believe that it really is so" (Fosbury 1819a, 8–9; a parallel passage appears in Fosbury 1817, 24). Only a diligent reader would realize, amid the multitude of topics Fosbury addressed in his obscure style, that he thought that the earth was flat.

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The anonymous author of *The Anti-Newtonian*, now known to be James Fosbury, was apparently a sincere believer in the flat earth a generation before Rowbotham took up the cudgels, although unlike Rowbotham he was not particularly invested in promoting the idea. Consequently, Fosbury's influence was probably limited to the readers of his privately published booklets and the unsympathetic staff at the Board of Longitude. There is no convincing evidence that he influenced Rowbotham. Presented obscurely and briefly, Fosbury's specific arguments are not nearly as detailed as Rowbotham's, whose *Zetetic Astronomy* ran 430 pages in its third edition from 1881. The similarities between their works are readily explainable in terms of their reliance on common sources, especially the Bible. So, while Fosbury was a genuine precursor of Rowbotham, he is best regarded as a historical cul-de-sac rather than as a figure responsible for a campaign of flat-earth folly that persists even today. ■

Acknowledgments

Thanks to Adam Ray, special collections manager at the Foyle Special Collections Library of King's College London, who provided a digital copy of *The Righteousness of God Defended*.

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Glenn Branch is deputy director of the National Center for Science Education, a nonprofit organization that defends the teaching of evolution and climate science. He studies the flat-earth movement avocationally.

Predicting the Next Paranormal Creature

Historical trends reveal how people construct imaginary monsters. Typically, paranormal creatures are envisioned in relation to the types of raw materials available during the time period and the level of scientific understanding of the general public.

LARRY CHAN

There seems to have been a new paranormal creature for every historical period. Fairies were among the oldest, with notable references in Celtic lore. Werewolves and vampires were popular during Victorian Times. The twentieth century saw the advent of Superman—who was known to be fictional—and aliens, Bigfoot, and the Loch Ness monster, which some cryptozoologists believe are nonfictional. A pattern to the invention of paranormal creatures[1] as they relate to the time periods in which they emerged can be seen by analyzing their strengths, weaknesses, and technological innovations.

Rare Materials Point to Weaknesses

A common element attributed to paranormal creatures is that they tend to have specific weaknesses, usually in the form of rare materials. Fairies are vulnerable to iron, according to Origins of Fairies (Briggs 1976, 320) and the *ChemEurope* blog, which states, "Iron, particularly Cold iron, was employed as a protective substance or charm against faeries. In Celtic Folklore, Fae are culturally held to hold an aversion to iron or even be harmed by the touch of iron" ("Iron in Mythology" n.d.).

During colonial times, iron was a high-value commodity. It was difficult to make iron with the technology of the 1700s, so it was reserved for the military and the wealthy. A commoner who possessed a small lump of iron would regard it as a treasure in a world where most of their belongings were made of wood and copper.

Mass production of iron became possible during the Industrial Revolution, according to the PBS documentary *American Experience* ("Iron and Steel" n.d.). It was during this time that werewolves in folklore began to develop an aversion to silver, a rare material of the time often used in wedding rings and family heirlooms.

The next wave of paranormal creatures emerged in the mid-twentieth century during World War II and the Cold War Era. It was then that radioactivity was becoming public knowledge due to J. Robert Oppenheimer's atomic bomb and increased public knowledge of the quantum theory. In 1939, DC Comics debuted Superman, an extraterrestrial who was vulnerable to a green radioactive crystal called kryptonite. Radioactive materials were as undesirable back then as they are today (save for low-level radiation used in day-to-day equipment), but before Chernobyl, it would have been extremely unlikely for a common person to come across lethal levels of radiation.

Half a century after Superman, the Terminator first appeared on the silver screen. During the 1980s, personal computers were starting to change daily life, as were speculations that artificial intelligence might one day rule over humanity. Business could be conducted more quickly, and as a result, successful businessmen had far less time to conduct their business. For instance, FedEx's innovative overnight shipping set new standards. Before FedEx, nothing had to be sent overnight; afterward, corporate commerce had to be conducted more rapidly, because consumers demanded everything immediately. The Terminator, being a killer robot that was sent back in time to retroactively eliminate the mother of the warrior who caused the Terminators' destruction, was an appropriate symbol of the time. Its vulnerability was time itself, because the Terminator that was sent back in time then caused the warrior's father to go back in time and conceive of the robots' demise.

The 1994 Disney cartoon series *Gargoyles* combined legendary sorcery with modern science. In this cartoon, billionaire Xanatos revives a set of enchanted gargoyle warriors who live by night and become stone by day. Their vulnerability, the Sun, causes them to develop a skin of stone, but it cracks off their

1. By "paranormal," this author refers to fauna that the scientific community considers fantasy.

bodies when the night falls; they are revived. The stone skin fragments are a rare material used by Xanatos to cast technology-based magic spells that he subsequently uses to fight against the gargoyles.

The parallel between these seemingly unrelated monsters is that they can be banished by materials that were rare for their times. Fairies in Celtic lore were capricious, prone to mischief and bad behavior. Therefore, people protected themselves by using iron. Wood could not have done any good because it was so common. Their logic was that whatever could banish a fairy must have been precious.

Once iron became a household commonality, silver became the next most precious material. Prior to the 1900s, the lore that a silver bullet could kill a monster was unheard of. It was only during the early 1900s that werewolves suddenly became allergic to silver. Lycanthropes had existed as far back as Greek mythology, but they had never had a definitive set of rules. Silver was beautiful, did not corrode, did not chemically react, and was constantly shiny. It then naturally became the bane of the werewolf.

The same pattern fits Superman. Radiation was rare, therefore he would be killed by a green crystal from another world—his home planet of Krypton. The Terminator was produced when the computer age accelerated the timetable of business deals. Therefore, the Terminator was killed by its own time travel; time had become a rare commodity. Gargoyles had superhuman strength at night, so the only way to combat them would be to use their magical skin in combination with technology. In the 1990s, technology was becoming increasingly important, and an expensive new technology emerged: electronics. Therefore, gargoyles could be killed by electronics in combination with sorcery.

Science and Technology Point to Strengths

Weakness based on rare materials are not the only pattern that folklore follows. Paranormal creatures also seem to follow trends in scientific awareness and tech innovation.

Fairies and werewolves pervaded a world where people didn't understand why livestock went missing or why there were strange rings of mushrooms in the meadow. By the 1900s, these monsters were considered silly and in the realm of children's stories. Instead, they were replaced by Superman, Bigfoot, and the Loch Ness monster. Widespread knowledge of evolution led the public to wonder if there were a missing link (whose only vulnerability appeared to be a film camera rather than a precious material). Widespread knowledge of dinosaur fossils led people to wonder if dinosaurs could still be swimming in a Scottish lake. Rather than pondering mushrooms in the field, people started pointing at odd lights in the sky and wondering about other planets.

Microsoft's effect on modern life spawned a wave of fears about artificial intelligence. Because no one could catch a killer robot walking through the forest in a blurry video, theories about sentient machines had to be reserved for the future. The public seriously began to wonder if in the year 2000 evil robots would eventually come to be. In this sense, human beings were behaving much like Terminators do—wondering about an enemy from another time period. The killer robot was a monster that did not yet exist but might manifest if society did not handle technology responsibly. It was a futuristic boogeyman.

Legendary and folkloric monsters' strengths also have common elements. Werewolves are affected by the Moon. Some scholars believe that this is because of the Moon's relationship to silver, in that they share a similar color. This is according to the 2003 documentary *Fang vs. Fiction*—although it should be noted that this documentary appeared in the specials section of the *Underworld* DVD, so the cited scholars are questionable. It is more likely that wolf howls are more frequent during full moons because more moonlight allows for increased nighttime hunting ("January's Full Moon" 2024).

Superman acquired strength from a yellow sun and was weakened by a red sun, in contrast to a vampire (which might survive a red sun because red light is often used in photography dark rooms). The Terminator was not affected by a heavenly body but by time itself. Time was its weakness, but also its strength. The robot's ability to travel through time also resulted in its creation, as the Terminator's destroyed CPU was used to manufacture all future Terminators. Time travel also allowed for mobility along another axis, other than three spatial dimensions.

These strengths are paralleled with historical models of the universe. In colonial times, the general public was aware of only two major celestial bodies, the Sun and the Moon. Therefore, werewolves and vampires had to be influenced by these two cosmic objects, which were important in determining how to sow crops and when the tides were going to rise. By 1939, people were aware that the Sun is not the only star and that stars come in a variety of shapes and colors. Hence, Superman would experience varying effects depending on the type of starlight he was under. In the 1980s, Einstein's theories on spacetime were still being discussed, and the general public was aware that space and time were interlinked. Because cosmological objects had already been seen in folklore, the monster at the end of the second millennium had to be influenced by time itself, not space. Time was the Terminator's "moon" to howl to, if Terminators were able to howl.

Predicting Future Creatures

Cryptozoologists will always find new imaginary monsters to add to their zoos. In viewing these historical trends, it is possible to speculate on what kinds of monsters they will devise in the future. These monsters will be based on current trends in science, technology, and culture. Relevant topics include digital technology (massive use of cell phones), immigration, global warming, the coronavirus, economic collapse, string theory, and world-weariness.

I will first mention that I already created a new series of fictional monsters meant for the third millennium. In my short film *Wereshark: Neptunerise* (Chan 2022a), I created an anthropomorphic shark beast that reacts to the planet Neptune and can only be killed by magnet bullets. In my short film *Reinek: Marslight* (Chan 2022b), I created an anthropomorphic deer monster called the reinek, which dances perfectly under the light of Mars. I also created a new monster called the Neodragon, which is a reptile monster that reacts to the planet Jupiter in the sky and can only be killed by gold bullets.

While I value my films, I also recognize that they are self-published and therefore have very few views on YouTube. Therefore, it is unlikely that the general public is aware of a Neodragon.

Nonetheless, I predict that cryptozoologists in the future will claim to have discovered a monster that is vulnerable to gold. Silver and iron have already been assigned to other paranormal entities, so the next cryptid must have a new weakness in the form of a precious metal. Gold is a logical next stage. Other potential weaknesses that might be implemented are platinum, Element 115, and other higher elements—yttrium, osmium, antimatter, taaffeite (a newly discovered gemstone)—as well as famous paintings/artwork, and fossil fuels.

Cryptozoologists will likely start discussing the existence of creatures from parallel universes. Of course, many Fortean researchers have been suggesting this for decades, i.e., rods and even Bigfoot, but I predict that parallel universes will factor into cryptozoology far more frequently because space and time have already been discussed. The only other degree of speculative freedom will be alternate realities. Creatures from parallel universes will have different laws of physics, allowing the conspiracy theorist to state that the monster is able to vanish into thin air because the parallel reality gives it the ability to do so. In this sense, the parallel universe is a strength similar to how the Moon is the werewolf's strength.

Alternatively, the superstring might be the strength or "moonlight" of another imaginary monster. Maybe it will be a monster that gains strength from a superstring and is able to harness a full understanding of the theory of everything, the unification of quantum mechanics and relativity. This monster might have godlike abilities, similar to the Strangers from the 1998 film *Dark City*, who could tune physical reality through will alone. Advances in string theory and M-Theory might generate paranoia that a godlike monster is causing mass misfortune and pulling divine puppet strings.

They might also invent a new monster that inhabits the world of the cell phone. YouTube is populated by countless videos of the "unexplained," showing grim creatures in the woods and mysterious entities prowling in people's driveways. The next logical step would be to imagine a monster that lives entirely in the realm of Wi-Fi, harnessing people's paranoia as a strength. It will probably have a set of rules wherein if someone uses a cell phone incorrectly, a monster's wrath will follow.

People who promote conspiracy theories tend to lose interest in subject matter when no new information becomes available. Chemtrails, which were hotly debated in the year 2014 on the Alex Jones show, have waned in popularity. In the same way, aliens are starting to become old hat. Because of this, cryptozoologists will probably stop looking up and start looking down, resurrecting the hollow earth hypothesis. Perhaps they will claim that creatures from the inside of earth are trying to migrate to the surface, meshing their theories with immigration politics. These creatures might have opposite-gravitational abilities from having to live on the underside of the hollow planet. Of course, this violates the laws of physics; negative matter cannot be produced on an efficient scale, according to physicist Michio Kaku (Kaku n.d.).

Due to global warming, there might be a flood of new monsters that are able to withstand intense heat and ultraviolet radiation. For example, one of my unpublished screenplays features a creature called the unicothe, which is the opposite of the vampire in that it gains strength from sunlight and dies when exposed to darkness. Conspiracy theorists will probably postulate a similar monster.

The coronavirus is often compared to science fiction scenarios involving zombies and infectious mutations (i.e., the T-virus from *Resident Evil*). I predict that the next logical step is for people to imagine a virus that not only takes control of a host's body but is itself intelligent—that is, a sentient bacterium. They might state that the bacterium is able to target people specifically, thereby mind-controlling major politicians and military leaders. They would fear a world where germs are literally intending to kill people.

In times of a weak economy and suffering job market, unemployed people will have a lot of free time. During this time, some of them might envision a monster that hunts down the wealthy. World-weariness is evident in the amount of time people spend on social media. A new monster might be invented that torments people through boredom or that lulls people with the promise of fun, similar to how mermaids were thought to lull sailors with song.

***

No one can know the future; they can only predict possible outcomes based on patterns. It remains to be seen how the third millennium will shape the world of cryptozoology and conspiracy theory and, accordingly, the study of skepticism. Nevertheless, history shows us that the human mind will always sculpt new creatures of the night, even in a serene evening. ■

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Larry Chan is a screenwriter and actor. He has written and directed five short films, including *Wereshark: Neptunerise* (available on YouTube). He was a semifinalist in the 2019 Page Screenwriting Awards and has narrated national commercials.

Everything Is Penguin

DANIEL LOXTON

Skeptical Inquirer pioneered organized skepticism with a simple idea: it's useful to take a good, hard, serious look at the kind of paranormal and fringe claims mainstream sources either ignore, laugh off, or uncritically promote.

This was certainly my approach to the so-called Clearwater Monster in 2021 (published in *Skeptic*, vol. 26, no. 4). This obscure case is justly remembered by cryptozoology specialists as one of the silliest monster mysteries of all time—because it was exposed in 1988 as a humorous amateur hoax, and also because it imagined a *fifteen-foot penguin* stalking the coast of Florida!

This penguin claim was solely advanced by Ivan Sanderson, a Scottish-born American nature and paranormal author. When a series of oversized, three-toed, dinosaur-like footprint trails appeared on Florida beaches in 1948, Sanderson led a media-funded expedition to investigate. He recounted this investigation in detail in his 1969 book *More Things* (alongside chapters on Bigfoot and other paranormal topics). The team's conclusion, he emphasized in his newsletter, was "the only kind of animal that could have left such tracks would be a giant penguin. Two dozen sane, sober citizens saw just such a creature along that coast that year, and all concurred in that it stood about 15 feet tall and had enormous feet." His book even claims he saw the monster with his own eyes!

This was goofy, head-scratching stuff even at the time, but all the more after the surviving hoaxer stepped forward to reveal the gag (and the crude, strap-on metal "feet" used to achieve it). Rarely has a case been closed harder! Yet, to this day, some die-hards still wonder, could Sanderson, an experienced naturalist, really fall for such a simple trick? And what about his own sighting?

There the case rested for decades: puzzling but solved. Why dig further? I only decided to blow the dust off the story because my kids thought it was funny!

I approach far out mysteries with a powerful secret weapon: chronological order. It's helpful to set aside accumulated lore and just ask: How did this story get started? How did it change over time? In this case, the previously overlooked two-decade gap between Sanderson's onsite investigation and his published account definitely called for attention. I wanted to know what he said in the first place. And what happened in the long years between?

Answers weren't easy to come by in the acute period of the COVID-19 pandemic, but I eventually got my hands on Sanderson's archived files regarding the case. They told a very different story. Far from endorsing the case, Sanderson's expedition radio reports *firmly declared the footprints a hoax*! He sensibly concluded in private letters that eyewitnesses misidentified Florida manatees. No one reported a giant penguin—least of all Sanderson—and no one had suggested a penguin made the footprints.

Sanderson added the penguin stuff many years later. His previously unmentioned personal "sighting of the beast" first appears in a draft chapter for his book. He then claimed to have spotted an "enormous" creature from a plane. "What I saw was about twenty feet long and eight feet wide," splashing on the surface of a river below.

These dimensions must have strained plausibility even for him. In a revised draft, Sanderson simply crossed these out and penciled in "twelve feet long and four feet wide."

One lesson here for skeptics is that deeper research can shed dramatic new light even on "solved" cases. A more urgent lesson is this is how the sausage gets made. Sanderson was one of the architects of modern paranormal pop culture. He coined the term *cryptozoology* and played key roles in popularizing mysteries from Bigfoot to the Bermuda Triangle. Like modern paranormal media, he positioned himself as earnestly in pursuit of the truth, but his real goal was storytelling. His archived papers reveal systematic stripping of skepticism and contrary evidence that would hamper his yarn as well as creative embellishment to intrigue paying audiences—namely, a giant penguin.

Sanderson meant no harm; he was just having fun while making a buck. But for every committed ideologue or ruthless grifter who finds an audience, there are dozens like Sanderson just making content. Whether it's performative outrage, "ancient aliens" on TV, or "AI" slop in our parents' Facebook feeds, our culture is drowning in stuff that's not only untrue but also unserious. So very much of everything is "giant penguin" all the time. ■

Daniel Loxton is an author, illustrator, and skeptical researcher.

For another take on this story, scan the QR code to read "The Clearwater Monster: How Market Forces Created Modern Pseudoscience." by Mark West

Artwork by Daniel Loxton

Growth of Large-Scale, Systematic Scientific Fraud Exposed

WILLIAM MATTHEW LONDON

In August 2025, a paper in the *Proceedings of the National Academy of Sciences* (*PNAS*) provided a detailed analysis of the growing problem of large networks of individuals and entities cooperating for financial gain and career advancement to contaminate the scientific literature with fraudulent research (Richardson et al. 2025).

The multidisciplinary team of authors affiliated with Northwestern University and the University of Sydney reported that some journal editors made problematic decisions significantly more frequently than would be expected by chance alone. For example, they identified thirty-three editors of the online journal *PLOS ONE* who frequently accepted articles that were later retracted.

They also identified twenty-one authors who frequently had papers assigned to editors flagged for retractions and eighteen authors who frequently directed articles to editors flagged for comments on PubPeer, an online platform scientists use for discussion of published research. While the identified editors are only 0.25 percent of all *PLOS ONE* editors, they edited 1.3 percent of all articles published in the journal by 2024 and 30.2 percent of the articles that were eventually retracted from publication. They operated as a cooperating network, sending manuscripts to one another. Most of them also authored articles that have been retracted by *PLOS ONE*.

Similar patterns were found in journals published by Hindawi. Across ten Hindawi journals, fifty-three editors frequently accepted articles that were eventually retracted.

The *PNAS* paper examined the coordinated production of fraudulent science through paper mills—perhaps better described as brokerages, which sell authorship to mass-produced, low-quality, and fraudulent research papers. A hallmark of paper-mill research is the use of images duplicated from previously published papers. A network analysis of 2,213 articles flagged for containing images copied from previous publications found that eight journal publishers account for nearly 75 percent of these articles. Only slightly more than a third of these articles have been retracted.

The *PNAS* paper also discusses an entity called ARDA with a website advertising journal publication among its services and its involvement in "4,565+ publications" as of June 2024. It found that, since January 2018, ARDA's website has listed 188 journals where customers can get published. Many of those journals have been listed in respected scientific and medical indexes. Some journals that were once legitimate have lost editorial control to paper mills. For five journals examined comprehensively, between 34.0 percent and 98.7 percent of the articles were found to be outside the journal's stated scope. An example is an article about roasting hazelnuts that was published in a journal about HIV/AIDS care.

Over time, some journals have been removed from indexes, making them less desirable to paper-mill clientele. Thus, ARDA has removed some journals from its website list and added new ones as replacements. The *PNAS* paper refers to this adaptation as "journal hopping."

The paper reported exponential growth in the number of journal article retractions over the past thirty years. Journals now retract articles, mainly in batches of more than ten. Nevertheless, the authors estimate that out of all suspected paper mill articles, only around 25 percent will ever be retracted—and only around 10 percent will ever reside in a journal removed from an index. They wrote:

> The trends we expose forecast serious risks ahead for the scientific enterprise. Large groups of editors and authors appear to have cooperated to facilitate publishing fraud. Networks of linked fraudulent articles suggest industrial scale of production. Organizations selling contract cheating services anticipate and counter deindexing and other interventions by literature aggregators. The literature in some fields may have already been irreparably damaged by fraud. Finally, the scale of activity in the enterprise of scientific fraud already exceeds the scope of current punitive measures designed to prevent fraud. Currently implemented punitive measures are not addressing the tide of fraudulent science.

The authors call for changing both the culture and incentives of science and for creating a system not undermined by potential conflicts of interest to support detection, investigation, and sanctioning of scientific fraud. They also call for "resources, human and technological, commensurate with the threat" and "urgent action."

As part of a statement on advancing the mission of the National Institutes of Health (NIH), the agency's director, Jay Bhattacharya, called for change of the culture of science that could disincentivize scientists from engaging in scientific fraud:

> Replicable, reproducible, and generalizable research must serve as the basis for truth in biomedical science. The "publish or perish" culture favors the promotion of only favorable results, and replication work is little valued or rewarded. NIH is prioritizing research that produces robust, reproducible results. We are exploring various mechanisms to support scientists focused on replication work, to publish negative findings, and to elevate replication research. (Bhattacharya 2025)

Nevertheless, the Trump administration has damaged the U.S. scientific enterprise, terminating hundreds of NIH grants for research on ideological rather than scientific grounds. It has proposed to cut 40 percent of NIH's budget. As Secretary of the Department of Health and Human Services, Robert F. Kennedy Jr. has called top medical journals "utterly corrupt" (Palmer 2025).

Clearly, more research is needed to guide the urgent actions required to prevent scientific fraud without undermining scientific progress. ■

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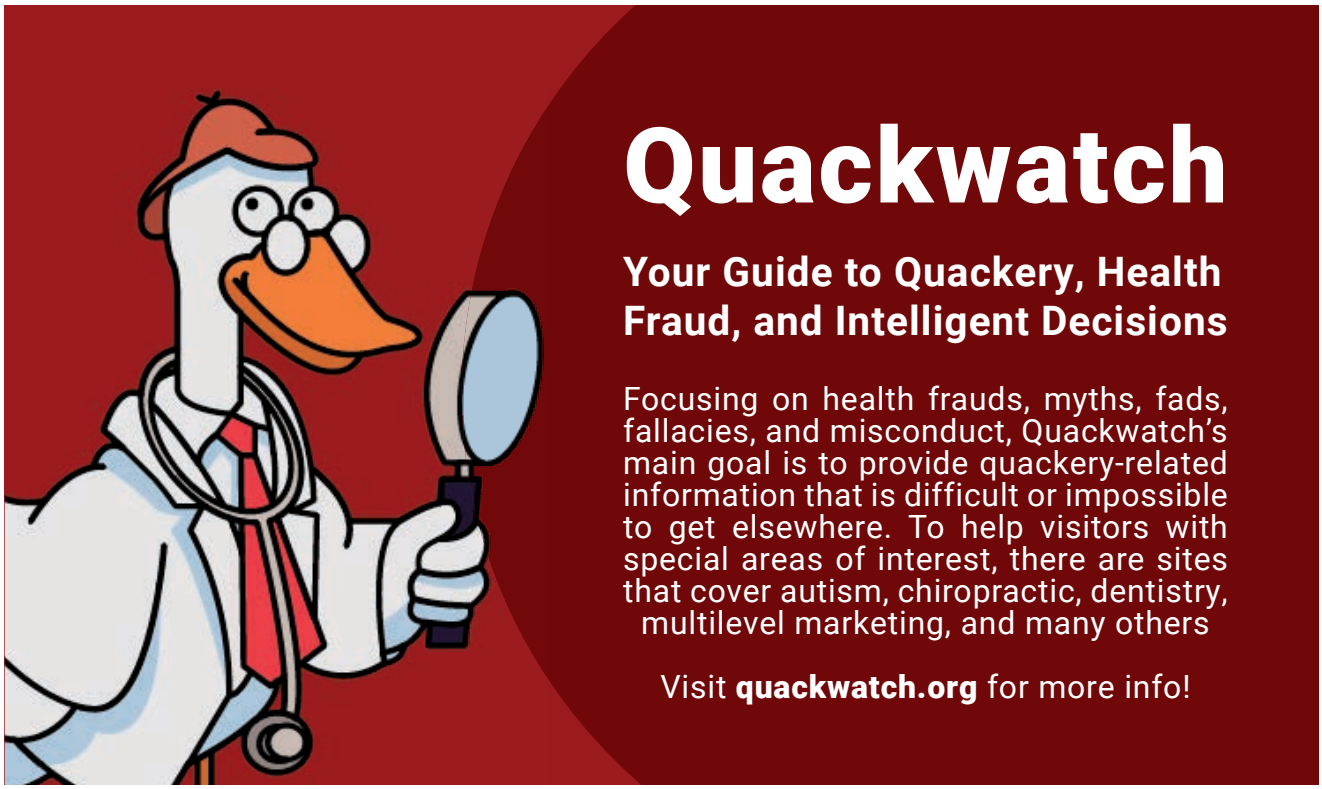
William Matthew London is editor of ***Consumer Health Digest***, the free weekly e-newsletter of the Center for Inquiry's Quackwatch, and an emeritus professor in the Department of Public Health at Cal State Los Angeles.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Focusing on health frauds, myths, fads, fallacies, and misconduct, Quackwatch's main goal is to provide quackery-related information that is difficult or impossible to get elsewhere. To help visitors with special areas of interest, there are sites that cover autism, chiropractic, dentistry, multilevel marketing, and many others
Visit quackwatch.org for more info!

FUN & GAMES

Edited by Stephen Hupp

YOU CAN FIND THE ANSWERS TO THESE GAMES IN SECRETS REVEALED (P. 66).

SILLY SORTING

This list includes some of the titles of SKEPTICAL INQUIRER covers and some of the episode titles from the first season of *Scooby Doo, Where Are You!*. Can you tell which is which? *Circle your guesses below.*

SI — BEWARE THE MYSTERY HOUSE!

SI — NEVER APE AN APE MAN

SI — HYPED HOLLYWOOD HORRORS

SI — A GAGGLE OF GALLOPING GHOSTS

SI — MONSTER MAYHEM

SI — WHICH WITCH IS WHICH?

SI — CHASING CHAMP

Comic by Celestia Ward

WHAT IF SOME PEOPLE APPLIED THEIR VACCINE STANDARDS TO EVERYTHING?
IT'S NOT TOTALLY EFFECTIVE! YOU CAN STILL GET SICK!
NO JAB
CAMOUFLAGE IS FOR SHEEP! YOU CAN STILL GET SHOT, EVEN IF YOU'RE WEARING IT, I HEARD!
CONDOMS ONLY WORK 99% OF THE TIME, BABE... WHY BOTHER?
UMMM...
HA! YOU TRUST BIG PARACHUTE? SOMETIMES THEY DON'T EVEN OPEN!
Celestia '25

CONNECTIVITY

These words can be divided into 3 groups, each with 3 words. Your brain excels at finding patterns—sometimes this helps, but other times it hurts!

Write your guesses below:

Find 3 groups of 3 connections...

JIM	GENIE	BANACHEK
ALPHA	STARGATE	BIGFOOT
FAIRY	MERMAID	STEVE

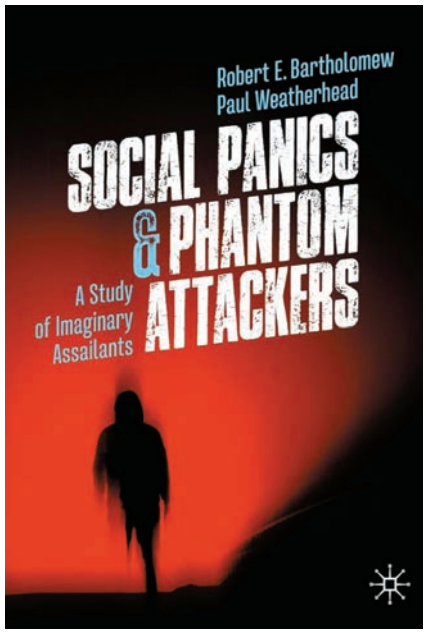
On Being Attacked by Something That Doesn't Exist

Benjamin Radford

In their new book *Social Panics and Phantom Attackers: A Study of Imaginary Assailants*, Robert Bartholomew (sociologist and CSI fellow) and Paul Weatherhead (critical thinking educator) examine a specific, largely unrecognized type of social panic: the phantom attacker. These cases typically begin with outbreaks of sensational claims of attacks by elusive mysterious figures who frighten the public and then seem to vanish without a trace, leaving few if any serious injuries—but many questions. Some of the most recognizable events include the panics surrounding *The War of the Worlds* radio play, the Monkey Man, phantom clowns, Havana Syndrome, and the Mad Gasser of Mattoon. But these are just the tip of the iceberg.

Phantom attackers have always been a particular interest of mine (full disclosure: I have coauthored two books with Bartholomew, and several of my investigations are mentioned in this book), and even being reasonably familiar with the subject, this book was a delight. There were incidents I'd never heard of, updates to older cases, and aspects I hadn't considered.

While many of these events seem quaint or amusing, phantom attacker panics can have real consequences, including needlessly frightening the public, misdirecting scarce resources, and even escalating wars. One especially concerning aspect of this phenomenon is the natural tendency to retaliate when one is attacked—whether that harm is real or perceived. Usually when we are attacked, we have at least some idea of the culprit; *someone* threw a punch or stole our vehicle. But in these cases, *there literally is no victimizer*; the harm is either imaginary or real but misattributed. Witchcraft accusations, both historical and modern, are one example: the harm may be real and demonstrable (an accident, fire, or illness, for example),

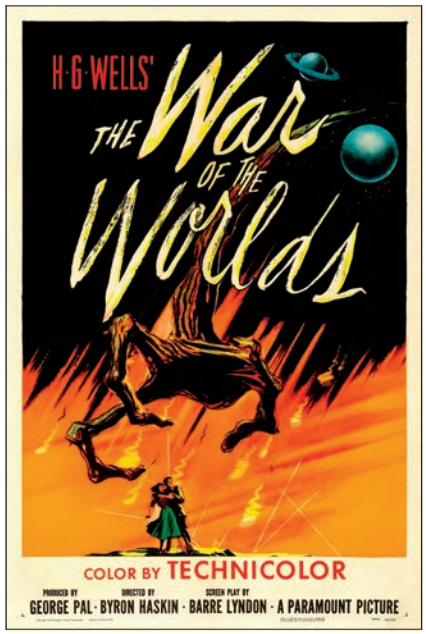


Social Panics and Phantom Attackers: A Study of Imaginary Assailants. By Robert E. Bartholomew and Paul Weatherhead. Palgrave Macmillan, 2024.

but the cause is misattributed. This can lead to innocent people being wrongly accused, attacked, or even killed.

Written in a scholarly yet accessible style, this book will be of interest to skeptics, folklorists, sociologists, and Forteans alike. The book is divided into nine sections, the topics and titles of which may ring a bell for many longtime readers of this magazine. They are:

- The Bogeyman: An Introduction to Phantom Assailants
- Spiked! The Great British Needle-Spiking Panic: A Crime in Search of Criminals
- Pins, Needles & Paranoia: HIV Panics
- The London Monster: An Eighteenth-Century Spiking Scare
- Phantom Slashers: From Out of the Shadows
- Mad Gassers and Ethereal Terrorists



- Serial Pet Killer Panics: From the Yorkshire Dog Poisoner to the Croydon Cat Killer
- The Annoyers: Mysterious Sprayers, Pitters, Biters, and Crackers
- Beyond Belief: Of Monkey Men and Genital Thieves

Yes, that's quite a survey of sociological strangeness! The book does far more than collect and rehash phantom attacker panics; it also puts them in context (for example, exploring how urban legends of "AIDS Mary" in the 1980s play into modern needle spiking panics) and looks at the parallels between contemporary and historical examples across Europe, North America, Asia, and Africa. The cross-cultural and media literacy perspectives in *Social Panics and Phantom Attackers* are especially valuable, and the book is a welcome addition to an understudied phenomenon. ■

Benjamin Radford, MPH, MEd, is deputy editor of Skeptical Inquirer and has written extensively about phantom attackers.

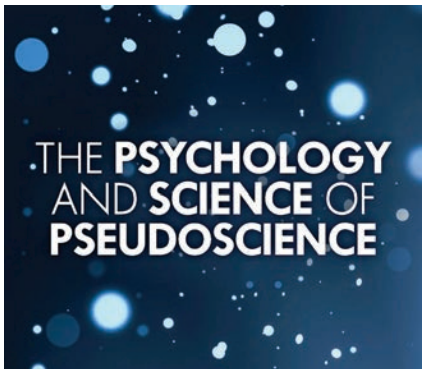
A Sympathetic Understanding of Paranormal Beliefs

Chris French

I will get straight to the point: Everyone should have a copy of *The Psychology and Science of Pseudoscience* on their bookshelf. Those new to the joys of skepticism will find that it contains a wealth of good advice on critical thinking and a wide range of illuminating examples of the very real dangers that can result when critical thinking is not applied to pseudoscientific claims. Even those who consider themselves well-versed in the principles of skepticism will, I am sure, find at least a few examples they have not come across before. Of course, those most in need of this book—believers in pseudoscientific claims—are the least likely to actually buy it. But it would make a great gift to send their way as a birthday present.

This is quite a hefty tome, running to some 365 pages and consisting of thirteen chapters plus thirty-eight pages of references and a detailed index. It is therefore a pretty heavy book in the physical sense, but it is very far from being a "heavy" read in any other sense. Hines has a clear and engaging writing style, ensuring that reading each chapter is always a pleasurable experience. This is facilitated by the appropriate use of humor directed at some well-chosen targets. However, it is clear throughout that the primary aim of Hines's analysis is to sympathetically understand the psychology of the paranormal believer, not to mock believers in any way.

As Hines sets out in a brief preface, the explanations offered in his book for belief in paranormal and pseudoscientific claims are mainly based upon three well-established psychological processes. The first of these is that both perception and memory are fundamentally constructive processes. As a consequence, although both perception and memory usually do a very good job of helping us to interact with the world around us, both are susceptible to errors under certain conditions. One should therefore always be very cautious when considering extraordinary claims



The Psychology and Science of Pseudoscience by Terence Hines. Rowman & Littlefield, 2025.

based upon nothing more than anecdotal evidence. The second factor that Hines highlights is the all-too-human tendency to perceive meaning and significance in randomness. Our ability to see patterns in the events around us is responsible for many of our greatest accomplishments as a species. The problem is that we sometimes see meaning and significance when they simply are not there, especially when we are primed to do so. The third cognitive bias highlighted is the tendency we all have to initially assume that when something happens in our environment, it happens because someone or something, with specific intentions toward us, made it happen. It is not hard to see how this tendency could lead to belief in ghosts, gods, and other invisible forces.

Chapter 1 provides an excellent general introduction to the nature of pseudoscience, including discussion of fascinating historical examples such as N-rays, polywater, and cold fusion. The remaining chapters are typically each devoted to one, two, or three related topics: psychics and psychic phenomena (Chapter 2); life after death (Chapter 3); laboratory parapsychology (Chapter 4); pseudopsychologies (specifically Freudian theory, Jungian theory, and humanistic psychology; Chapter 5); astrology and the lunar effect (Chapter 6); UFOs I: close encounters of the first kind (Chapter 7); UFOs II: photographs, physical evidence, and abductions (Chapter 8); ancient astronauts and the Bermuda triangle (Chapter 9); faith healing (Chapter 10); alternative medicine (Chapter 11); and mass hysteria, sick buildings, and environmental health scares (Chapter 12).

The only exception is Chapter 13, "Special Topics in Pseudoscience." Into this single chapter, Hines manages to cram enlightening discussions of brain pseudoscience (hemispheric differences, brain and memory training), autism and vaccines (facilitated communication and other bogus treatments), creationism and intelligent design, criminal profiling and other forensic junk sciences, cryptozoology (Bigfoot and yeti, chupacabra), dowsing and the magic pendulum, firewalking, polygraphy and lie detection, and the Shroud of Turin.

Given the huge number of topics covered in this book, it is not surprising that the discussions of some are in far greater depth than the discussions of others. All the topics covered in Chapter 13, for example, are summarized in at most a few pages and in one case (firewalking) in less than a page. Many of these topics have been the subject of numerous published papers, articles, and even book-length reviews. However, even when providing only brief coverage of such topics, Hines always provides citations to other, more detailed, sources for the interested reader.

I would find it extremely challenging to list my own top five skeptical books. After all, there are so many excellent publications out there. I am confident, however, that this book would be on that list. ■

Chris French (c.french@gold.ac.uk) is a CSI fellow and emeritus professor of psychology at Goldsmiths, University of London. His latest book is *The Science of Weird Shit: Why Our Minds Conjure the Paranormal* (MIT Press, 2024).

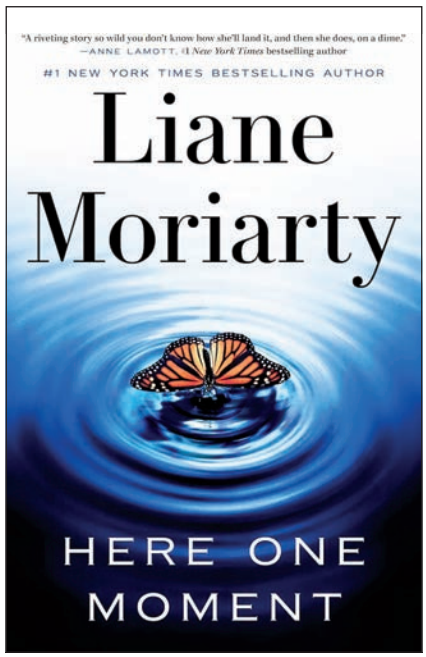
REVIEW]

A Flight of Fancy about Psychic Predictions and Probabilities

Adrienne Hill

Here One Moment, a best-selling novel by Liane Moriarty, is a thought-provoking exploration of fate, fear, grief, mental illness, and mathematics. My reading experience had its twists and turns. I questioned whether I should continue or not. Initially, I felt uneasy with what seemed like an endorsement of psychic phenomena—a theme I find challenging to connect with unless the book is fanciful. Moriarty's books are far from fanciful. They send you into the world of the characters, making you cry, laugh, and connect. The characters become your best friend or your bully.

The book starts with an older woman walking down the aisle of a plane traveling from Hobart to Sydney in Australia. She points to passengers and members of the flight crew, predicting their cause of death and their age at which it will occur. The book continues following many of the people who received the predictions and details how they dealt with this apparent knowledge of, in some cases, their imminent deaths. If this had been my first book by Moriarty, I likely would not have finished it, but I was familiar with her style as exhibited by the book *Nine Perfect Strangers*, which starts by seemingly advocating high-priced wellness retreats but eventually delves into the pros and many cons of these institutions using a complex weave of individual's stories. Moriarty's subtle foreshadowing hinted at a logical explanation, which reassured me to continue and kept me curious about how the story would unfold. Yet my discomfort grew as I proceeded because many of Moriarty's characters advocated for the belief that the woman was a psychic, especially when the predictions seemed to be coming true.


"A riveting story so wild you don't know how she'll land it, and then she does, on a dime."
—ANNE LAMOTT, #1 New York Times bestselling author
#1 NEW YORK TIMES BESTSELLING AUTHOR
Liane Moriarty
HERE ONE MOMENT

Here One Moment. By Liane Moriarty. Crown, 2024.

Moriarty masterfully portrays how the predictions ripple through the lives of the passengers and flight crew. One passenger reconnects with an old friend, and one passenger becomes a more cautious driver. The author enters the realm of mental health, correctly describing effective treatments and the often-hidden symptoms of obsessive-compulsive disorder (OCD), illustrating how harmful psychic predictions can be for those with the diagnosis. She discusses the wide variety of symptoms for people experiencing depression, including lesser-known aspects such as "smiling depression."

In the book's second half, examples and discussions of statistics and common fallacies slowly become more frequent. The story incorporates independent variables, randomness, probability, and the gambler's fallacy correctly and in a way that is easy to understand. This challenges the characters and readers to question their understanding of chance versus causality, emphasizing the interplay between perception, coincidence, and logic. I wonder if a believer in psychics would experience the reverse of my own experience. They might begin by loving the book and the concept that people can predict the future, with their thoughts turning uncomfortable as the explorations of probability and randomness evolve.

Additionally, while reading the acknowledgements at the end of the book, I noticed Moriarty listed Mark Edward's book *Psychic Blues: Confessions of a Conflicted Medium* as a resource. This reference helped explain her accurate depiction describing the methods that psychics tend to use.

As the layers of the mystery surrounding the psychic lady on the plane unravel, the novel evolves into an engaging exploration of love, loss, and logic. Initially, I found the theme challenging, but Moriarty's trademark wit, intricate plotting, and interesting characters kept me reading, especially as precise portrayals of mental health issues and mathematical discussions occurred as the novel progressed. *Here One Moment* by Moriarty is my favorite of her books to date, mainly because of the cognitive dissonance I faced while reading it while becoming increasingly attached to the characters. ■

Adrienne Hill, a former high school mathematics teacher, is deeply involved in fostering critical thinking and education through her diverse roles. She serves as a board member for About Time and for the Tourette OCD Alberta Network, where she contributes as a presenter and educational consultant. She is an editor with Guerrilla Skepticism on Wikipedia and a reporter for *The Skeptic Zone* podcast. Her website is zonegiggler.ca.

Brain Drain

In the September/October 2025 issue of Skeptical Inquirer, Katie Suleta had a lot of important things to say in her article "Brain Drain: A Consequence of Attacking Science." As Americans, we need to stand up for our education and innovation. Why should we allow our political leaders to take away the exact thing that has brought us where we are today? Science has given us knowledge about healthcare, technology, climatology, and even our own bodies. A quote from Suleta that really stuck out to me was "Scientists, researchers, and academics are arbiters of truth and reality, and if you can remove them then you can control what you want reality to be." I think that is something we all, as a society, need to think about and take into consideration.

Madilyn Ward
Johnston City, Illinois

In response to Katie Suleta's article about brain drain, I respectfully disagree with her claim that students and researchers in health-related fields have no choice but to pursue opportunities abroad. Although I agree and acknowledge that recent political actions from the current administration have posed many challenges to science-based research, relocating abroad is not the only—or even the most effective—solution. Many scientists remain committed to their work in the United States, because there is a growing responsibility to strengthen the nation's scientific culture. Rather than relocating, the focus should be on developing alternative sources of funding and fostering greater collaboration among institutions. Despite the challenges, maintaining scientific integrity and supporting research in the United States are essential. Now more than ever, we must empower researchers to confront these challenges and build solutions within our own communities.

Kate Cornejo
Bloomington, Illinois

Katie Suleta responds:

I appreciate Kate Cornejo's comments about my article. I would like to point out that I did not say that going abroad is the only option for researchers and students, just that many would given the competing pressures and options available. I agree wholeheartedly that staying and attempting to salvage and rebuild is incredibly important. It's what I'm choosing to do. However, I also recognize that because I am established in my career, this might be an easier option for me than others. I fully believe that investing in alternative sources of funding and seeking out opportunities to collaborate are invaluable work. They were even before all of this. But I also will not judge those who have lost their jobs or cannot get started in their careers for choosing to go abroad.

Chained Dogs and Boiled Frogs

Benjamin Radford's discussion of chained dogs in the September/October 2025 issue reminded me of friends of mine on a rural property who had to chain their dog up every night because otherwise it would chase the sheep on neighboring farms, which could get it shot. But the dog forcefully objected to being chained up. So, they decided to feed the dog at the same time as chaining it up, thinking the dog would come to accept being chained up because it always came with food. What happened instead was that the dog refused to eat, because eating was always associated with being chained up!

Ian Robinson
President Emeritus, Rationalist Society of Australia
Cowes, Victoria, Australia

In response to Benjamin Radford's article about boiled frogs, the obvious counterexample to the myth is our very own digestive system. My bladder gets full bit by bit. The pressure increases slowly, but I do not get used to it. At some point, I have to go to the bathroom.

Moshe Vardi
Bellaire, Texas

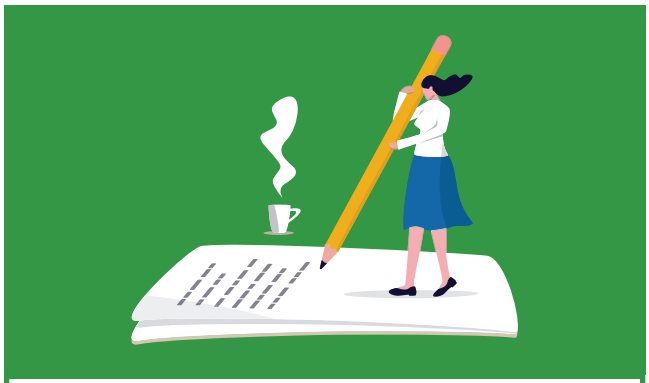
Preaching Vaccines

I was heartened to see Andrea Love briefly mentioned in the September/October 2025 *Wired* magazine's two-page graphic report Operation Influence.Her "Inside Immunity" column in the September/October 2025 issue of SI is a powerful response to vaccine naysayers. Lucid and informative as usual, she makes her case well. However, given that most SI readers are probably like-minded, I believe she is "preaching to the choir." It would be great if this information could be disseminated to a larger audience. Please pass along my kudos. I hope she (and you all) continues the great and (sadly) necessary work. Thanks for all you all do.

Bob Paterson
Lewisburg, Pennsylvania

Editor Stephen Hupp responds:

I agree with all the points made by Bob Paterson. We've been delighted to have Andrea Love writing the "Inside Immunity" column for SI. I'll add that even the choir can benefit from a little preaching, especially when the preaching is science-based and tackles difficult topics. The preaching helps the choir go out and sing to the rest of the world. That said, most of Love's columns are freely available at skepticalinquirer.org, and we kindly request that our readers share them widely!



Send in a Letter to the Editor

Letters to the Editor are for views on matters raised in previous issues. Letters should be no more than 225 words. Due to the volume of letters received, not all can be published. Those selected may be edited for space and clarity. Authors criticized in the Letters column may be given the opportunity to respond in the same issue. Submit Letters to the Editor by email text (not attachment) to letters@skepticalinquirer.org. In the subject line, provide your surname and informative identification, e.g., "Smith letter on Jones evolution article." Include your name and location (City, State) at the end of the letter.

SECRETS REVEALED

Connectivity Answer

Group #1: JIM, GENIE, and BANACHEK are nicknames (or stage names) for authors who contributed to the cover story of this issue of SKEPTICAL INQUIRER (i.e., Jim is for James E. Alcock, Genie is for Eugenie Scott, Banachek is for Steven Shaw).

Group #2: ALPHA, STARGATE, and STEVE are "projects" related to skepticism (i.e., Project Alpha, The Stargate Project, and Project Steve).

Group #3: FAIRY, MERMAID, and BIGFOOT are fictional creatures.

Silly Sorting Answer

Beware The Mystery House! = SI
Never Ape an Ape Man = SD
Hyped Hollywood Horrors = SI
A Gaggle of Galloping Ghosts = SD
Monster Mayhem = SI
Which Witch Is Which? = SD
Chasing Champ = SI

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CFI France
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Kenya
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